


Policy Analysis Report

To: Members of the Board of Supervisors
From: Budget and Legislative Analyst's Office 
Re: Economic and Administrative Costs Related to Alcohol Abuse in the City and County of San Francisco
Date: November 20, 2017

Summary of Requested Action

The office of Supervisor Mar requested that the Budget and Legislative Analyst examine the numerous medical, administrative, and societal costs, both direct and indirect, that accrue to the City and County of San Francisco because of alcohol abuse and related issues. This report examines the direct costs to the City to address alcohol-related incidents, including the cost of public safety calls for service and the treatment of alcohol-impaired individuals in City facilities. It also estimates some of the broader economic costs that result from alcohol abuse using the methodologies developed by academic researchers.

Next, we demonstrate the density of alcohol outlets in City neighborhoods and illustrate the relationship between outlet density and different types of crime. Finally, the report examines how the City and State regulate the number of alcohol outlets and the public nuisances associated with them, and how the City's Deemed Approved Ordinance could be strengthened in the future.

For further information about this report, contact Severin Campbell at the Budget and Legislative Analyst's Office.

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Executive Summary

Alcohol-Related Costs

- **We estimate \$54,828,628 in total annual City administrative and programmatic costs related to alcohol.** Most costs—91 percent or \$50,056,931—are for treatment, prevention, and education programs administered by the Department of Public Health and the Human Services Agency. Remaining costs are for public safety and alcohol-specific cleanup costs.
- **We calculate broader economic costs of \$655,316,528 from alcohol abuse and related incidents in the City, and total quality-of-life costs of \$1,065,439,490,**

using methodologies from academic studies. The economic and quality-of-life costs combined are equivalent to two percent of total personal income¹ in the City. Included in our estimates are costs related to years of life lost and hospitalizations due to alcohol-related illness and injury, injury and fatality due to motor vehicle collisions, fetal alcohol syndrome, high-risk sex, productivity loss, and crime. These costs accrue to individuals and private companies, as well as City departments, and we do not break out costs by payer. Therefore, these costs should be considered distinctly from (and may not be added to) costs to City departments described above.

Alcohol Sales Outlet Density

- Our analysis shows that certain Census tracts in neighborhoods including Bernal Heights, Chinatown, Hayes Valley, Japantown, Nob Hill, North Beach, Potrero Hill, South of Market, the Tenderloin, and the Western Addition have a disproportionate share of alcohol sales outlets relative to their population size. **These areas tend to have a higher density of violent crime and property crime as well as a higher proportion of residents with incomes below the poverty threshold.** This is consistent with numerous academic studies that argue that the density of alcohol outlets contributes to negative outcomes associated with alcohol abuse.

Policies to Mitigate the Costs of Alcohol Abuse

The State Alcoholic Beverage Control (ABC) Act, City zoning restrictions and the City's Deemed Approved Ordinance (DAO) all mitigate the costs of alcohol abuse. The State ABC Act and City zoning policies restrict the number and/or location of alcohol sales outlets in San Francisco in order to protect public health and safety and reduce the incidence of alcohol abuse in a given area, and the DAO was adopted to mitigate the nuisance impact of existing alcohol sales outlets on surrounding communities. In this report, we describe these policies, discuss best practices related to Deemed Approved Ordinances in California, and describe a recent attempt to establish an alcohol mitigation fee, which ultimately failed in 2010, to recoup some of the costs that accrue directly to City departments.

No net new licenses to sell alcohol may be issued in San Francisco

- **The California Alcoholic Beverage Control (ABC) Act restricts the number of on-sale and off-sale licenses that sell alcohol at the county-level** based on population size. On-sale outlets sell alcohol for consumption on the premises, while off-sale outlets sell alcohol for consumption elsewhere.

¹ According to data from the Bureau of Economic Analysis, the personal income of all San Francisco residents was \$89,533,450,000 in 2015.

- **The outlet density in San Francisco exceeds the density limits for on-sale general licenses and off-sale licenses, as dictated by the State.** Establishments with a “general” license may sell liquor as well as beer and wine.
- **Because the current outlet density in the City exceeds the maximum threshold, no net new on-sale general or off-sale licenses may be issued.** However, licenses may be traded or sold between businesses and this can change the distribution of alcohol sales outlets across the City.

Rules governing the transfer of existing licenses to sell alcohol

- **The City’s Planning Code prohibits the transfer of licenses to establishments in certain parts of the City.** The City has six special use districts or restricted use districts that prohibit new off-sale outlets and establish rules for intensification or relocation of existing outlets, including: the Lower Haight Street Alcohol Restricted Use District, Mission Alcoholic Beverage Special Use District, North of Market Residential Special Use District, Haight Street Alcohol Restricted Use Subdistrict, Third Street Alcohol Restricted Use District, and Lower Polk Street Alcohol Restricted Use District. Three of the restricted use districts—Haight Street, Third Street, and Lower Polk Street—also prohibit new on-sale outlets.
- **Besides the restrictions placed on the location of alcohol outlets by the City, the State ABC Act also prohibits the transfer of licenses to areas of “undue concentration,” or that have high crime concentration or high density of alcohol sales outlets.** However, the rule has an exception clause that allows a license to be issued in such an area if the local governing body determines that public convenience or necessity would be served by the issuance. In San Francisco, the Board of Supervisors determines if the proposed new outlet meets these criteria and the license may be issued at a public hearing. In most cases, the Board approves the issuance, if the business agrees to meet certain conditions stipulated by the City’s ABC Liaison Unit (ALU). **Therefore, provisions in the State ABC Act to prevent increases in density in areas of “undue concentration” typically do not prevent the transfer of licenses to new businesses in outlet dense areas in San Francisco.**

The City’s Deemed Approved Ordinance

San Francisco adopted a Deemed Approved Ordinance (DAO) in 2007 to establish public nuisance standards that pre-existing outlets (i.e. outlets established before the State ABC Act was enacted) and new outlets must abide by in order to maintain their licenses in the City. While the California Department of Alcoholic Beverage Control is the only entity that may revoke a liquor license, a jurisdiction may revoke an outlet’s “deemed approved” status, effectively prohibiting the outlet from continuing to operate in that jurisdiction.

- **San Francisco is the only county with a DAO that does not regulate both on-sale and off-sale outlets** and has the lowest maximum fee out of all jurisdictions that have an annual fee according to a 2009 report conducted on behalf of the Ventura County Behavioral Health Department that identified best practices related to the implementation of DAOs statewide.
- **San Francisco’s process for revoking an establishment’s “deemed approved” status is more cumbersome than other jurisdictions**, as it may only begin after the second violation of the DAO occurs within a three-year period. The City Attorney has never brought a “deemed approved” establishment to an administrative hearing over compliance with the DAO, and no establishments have lost their “deemed approved” status under the DAO since its passage.
- **The DAO could be strengthened to be a more effective tool for mitigating the nuisance impact of alcohol sales outlets on the surrounding community.**

Policy Considerations

We recommend that the Board of Supervisors consider policy changes in three main areas:

- **Alcohol-Related Tracking:** Departments should explore the feasibility of adding an indicator to their databases to specify alcohol involvement. This is especially true for departments that are in the process of adding new databases. Developing an estimate of the City administrative and operational costs that are alcohol-related, including public safety costs, motor vehicle incidents and health-related programming is currently difficult because many departments do not indicate alcohol involvement in their databases.
- **Alcohol Outlet Density:** The City should consider exercising greater latitude to deny issuance of land use permits in areas of “undue concentration” or to add additional conditions to permit issuance in light of the finding that these areas have a higher concentration of low-income residents compared to other areas.
- **City’s Deemed Approved Ordinance (DAO):** The DAO could be strengthened by extending the jurisdiction of the ordinance to both on and off-sale outlets and by making the process for revoking an establishment’s “deemed approved” status (for establishments that do not comply with the performance standards) less cumbersome. The Board should review the annual fee and consider raising it and allowing a portion of fee revenue to be used to cover enforcement costs of the San Francisco Police Department. Currently, any fees or penalties collected may only be used to cover costs to the Department of Public Health for outreach and education related to the DAO and the City Attorney for code enforcement.

Introduction

The consequences of alcohol abuse can be severe.² Alcohol abuse is linked to illness, disability, and premature death, and contributes to increases in crime and motor vehicle accidents. Many of the costs associated with these impacts are not borne by the alcohol user. The Centers for Disease Control and Prevention (CDC) estimates that excessive alcohol use cost the public \$249 billion in 2010 and that more than \$100 billion—or 40 percent—of these costs were ultimately paid by governments.³ The City of San Francisco incurs significant health care costs, treatment and prevention costs, and law enforcement costs because of alcohol abuse, as well as costs associated with motor vehicle accidents and premature death from alcohol-related causes.

The purpose of this report is to describe the impact of alcohol abuse on City services and estimate the economic costs borne by the City.

To estimate the economic costs that accrue from alcohol abuse, we use methodologies developed by academic researchers. For example, we estimate costs related to: 1) Years of Life Lost (YLLs) due to alcohol-related premature mortality; 2) traffic collisions and alcohol-induced accidents; 3) fetal alcohol syndrome; 4) high-risk sex; 5) productivity losses; and 6) crime.

We also examine how alcohol sales outlets are distributed throughout the City, explain City and State regulations regarding outlet density, and make recommendations to strengthen the City's Deemed Approved Ordinance.

Many of the bad effects that result in administrative costs and economic impacts occur due to binge drinking and/or the continued abuse of alcohol over a sustained period. The Centers for Disease Control and Prevention defines binge drinking as a pattern of drinking that brings a person's blood alcohol concentration (BAC) to 0.08 grams percent or above. This typically occurs when men consume five or more drinks and when women consume four or more drinks, over the course of two hours.⁴

Using data from the California Health Interview Survey (CHIS), the San Francisco Department of Public Health (DPH) reports that in FY 2013-14, 39 percent of adults overall in San Francisco engaged in binge drinking on at least one occasion,

² The Centers for Disease Control and Prevention (CDC) defines alcohol abuse as “a pattern of drinking that results in harm to one's health, interpersonal relationships, or ability to work”.

³ Sacks, Jeffrey J. et al. “2010 National and State Costs of Excessive Alcohol Consumption.” American Journal of Preventive Medicine 2015, Volume 49, Issue 5, e73 - e79.

⁴ Centers for Disease Control. “Fact Sheets – Binge Drinking.” Page Updated October 16, 2015.
<<http://www.cdc.gov/alcohol/fact-sheets/binge-drinking.htm>>

compared to 32 percent of surveyed adults in California overall. Men are twice as likely to binge drink as women, and young adults are more likely to binge drink than older adults.⁵

City Administrative Costs Related to Alcohol Consumption and Abuse

Alcohol-induced behavior can lead to noise complaints, property damage, traffic collisions, bodily injury and death, and the need for intervention from law enforcement. We define alcohol-related costs in this section as the cost of incidents, programs, and services that are directly attributable to alcohol use, abuse, and education.

We interviewed individuals at the following departments to determine total City administrative costs related to alcohol-involved incidents. Exhibit 1 below indicates whether the department tracks alcohol-related costs. Not all of the departments were able to identify direct costs related to alcohol. Further, some departments and agencies identified that costs do exist but that the department does not track incidents by whether alcohol is involved, thus making it difficult to estimate the precise cost of alcohol to the department.

Exhibit 1: Tracking of Departmental Costs Related to Alcohol

Department	Alcohol-Related Costs
City Attorney	Unavailable
Children, Youth and their Families	No specific costs
Economic and Workforce Development	No specific costs
Emergency Management	Yes
Fire	Yes
Human Services Agency	Yes
Juvenile Probation	Yes
Police Department	Yes
Public Health, San Francisco	Yes
Adult Probation	Unavailable
Public Defender	Unavailable
Public Works	Yes
Sheriff	Yes
Treasurer-Tax Collector	Unavailable

Although alcohol sales generate revenue for the City, we were unable to estimate any of the local tax and fee revenue collected from alcohol sales because of how the City tracks and reports on these revenue streams.

⁵ San Francisco Department of Public Health. "San Francisco Community Health Needs Assessment." Appendices. 2016.

In this section we separate City costs into three categories: 1) Public Safety Costs; 2) Education, Prevention and Treatment Services; and 3) Property-Related Costs; and report costs by department.

Public Safety Costs

Emergency Management

According to the Deputy Director at the Department of Emergency Management, the vast majority of alcohol-related calls are medical calls, 415 calls (noise complaints), various fight or threatening codes, 910 calls (well-being check by the Police Department), and 917 calls (suspicious person). The department does not have a good way of tracking which of these call types involved alcohol and which did not. There are two types of calls for which alcohol is the primary reason for the call: codes 811 (intoxicated person) and 819 (rolling of a drunk, i.e. robbing someone who has passed out from being drunk). In FY 2015-16, there were 4,012 calls for both types combined, including police officer generated calls, as illustrated in Exhibit 2 below.

Exhibit 2: 811 and 819 Service Calls, FY 2015-16

Call Type	DEM Generated	Officer Generated	Total
811	3,355	611	3,966
819	44	2	46
Total	3,399	613	4,012

Source: Department of Emergency Management

To estimate the total cost to the department for these calls, we divided 4,012 by the number of non-administrative, police incident calls in FY 2015-16. We then multiplied this ratio (.3%) by the total General Fund revenue allocated to the emergency communications function in FY 2015-16. We estimate a dollar cost of \$91,009 spent in that year. This is likely an underestimate of the total spent by the department on alcohol-related calls, however, as the Emergency Communications Deputy Director emphasized that many other calls involve alcohol but that they are not tracked as such.

Fire

The Fire Department does not generally track when alcohol is involved in a service call. An exception is made when the department creates a patient record for a medical incident in which the symptom/complaint is due to alcohol. The department provided information about the number of patient records that directly reference alcohol and the cost of providing medical services for those calls. Missing from these figures might be other incidents where alcohol was

involved but did not directly cause the problem, such as an individual being injured by someone else impaired by alcohol.

Exhibit 3 illustrates the number of the Fire Department’s Emergency Medical Service (EMS) calls in FY 2015-16 that resulted in the generation of a patient record related to alcohol. It also includes the total charges related to those EMS calls and the total payment received for them. To calculate the cost to the City because of alcohol related EMS calls, we subtracted from the charges the payment received, which was \$3,947,557, as shown below.

Exhibit 3: Number of EMS Calls by Type in FY 15-16 and Associated Charges for the Fire Department

Type	Count	Charges	Payment
Idiosyncratic alcohol intoxication	5	\$9,905	\$2,273
Alcohol withdrawal	2	3,983	1,854
Alcohol abuse, unspecified	27	46,471	2,497
Alcohol abuse, uncomplicated	1,087	2,097,893	247,488
Alcohol dependence, uncomplicated	952	1,857,599	259,517
Alcohol dependence, in remission	1	1,939	
Alcohol dependence with unspecified alcohol-induced disorder	11	21,819	2,419
Alcohol dependence with withdrawal, unspecified	36	70,504	11,099
Alcohol dependence, alcohol-induced psychotic disorder, unspecified	1	1,904	132
Alcohol use, unspecified with intoxication, unspecified	217	423,983	61,164
Total	2,339	\$4,536,000	\$588,443
Cost to the City			\$3,947,557

Source: San Francisco Fire Department

Juvenile Probation

According to the Juvenile Probation Department, the department provides substance abuse programming for alcohol and drug-use to juveniles on probation. However, they were not able to provide us with an estimate of the number of juveniles that receive substance abuse treatment for alcohol nor an estimate of the total cost for all substance abuse programming (alcohol and drug use combined).

Juvenile Probation provided cost estimates for Secure Continuous Remote Alcohol Monitors (or SCRAM devices). SCRAM devices are ankle monitors that are ordered by the court to detect alcohol use. In 2015, fourteen youths were placed on SCRAM devices, and they had a combined total of 685 days on the monitors. The

monitors cost approximately \$13 per day of use, for a combined total of \$8,905 in 2015.

Police

SFPD Arrests

Although alcohol use may fuel many different types of crime, there are four types of crime for which alcohol is the primary reason for arrest—driving under the influence (DUI), public drunkenness, consuming alcohol in public view, and liquor law violations. The San Francisco Police Department (SFPD) made 717 alcohol-related arrests in FY 2015-16, as illustrated in Exhibit 4 below, and these arrests comprised 3.6% of total arrests that year.⁶

Exhibit 4: SFPD Alcohol-Related Arrests, FY 2015-16

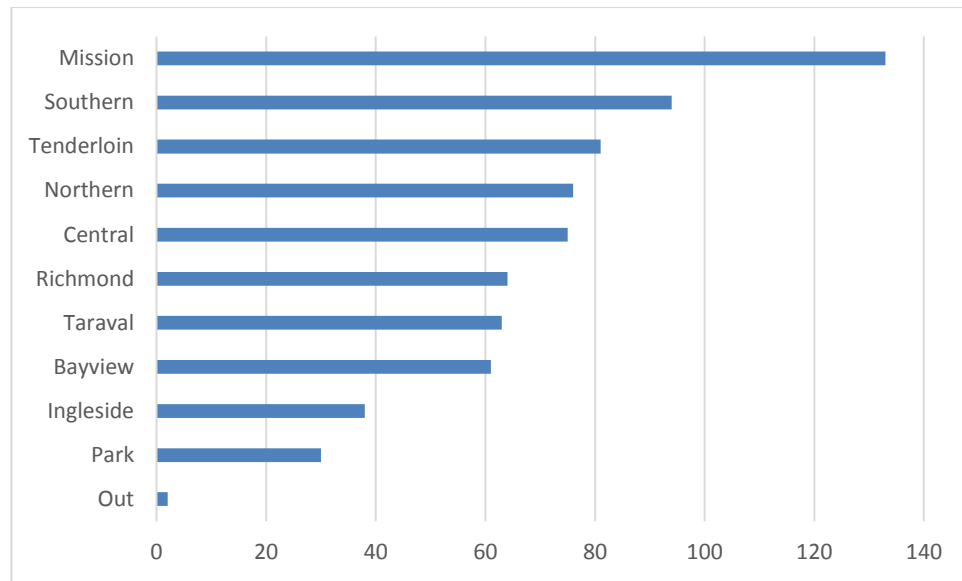
Arrests	Number
19090 - Alcohol, Under Influence of in Public Place	365
65050 - Driving While Under the Influence of Alcohol	255
30155 - Alcohol, Consuming in Public View	74
17030 - Liquor Law Violation (general)	12
65056 - Driving While Under the Influence of Alcohol, with Injury	11
Total	717

Source: Police Department

Nearly one-third of all SFPD alcohol-related arrests (227 out of 717) occurred in the Mission and Southern Police Districts as shown in Exhibit 5 below. Eighty-one arrests (11%) occurred in the Tenderloin Police District, which is less than one-tenth the area of the Mission Police District and the smallest Police District by area. The five districts with the highest numbers of alcohol-related arrests are all located in the northeast part of the City, areas that also tend to have higher density of both on-sale and off-sale alcohol outlets as illustrated in the Outlet Density Analysis section of this report.

⁶ Note, SFPD arrest data does not give a comprehensive view of the number of alcohol-related incidents requiring intervention by law enforcement because other law enforcement agencies also make alcohol-related arrests. For example, California Highway Patrol (CHP) makes the majority of DUI arrests.

Exhibit 5: SFPD Alcohol-Related Arrests by Police District



Source: Police Department

Property Damage

The SFPD provided data on the number of crimes for which alcohol was the primary reason for arrest that property damage was indicated in the police report. This data likely underreports alcohol-related incidents that led to property damage because property damage due to alcohol consumption is not a mandatory field in the reports. The SFPD reports 46 incidents of property damage in connection to alcohol-related arrests during FY 2015-16, as illustrated in Exhibit 6 below.

Exhibit 6: SFPD Reported Property Damage Incidents, FY 2015-16

Property Damage Incidents	Number
19090 - Alcohol, Under Influence of in Public Place	42
65050 - Driving While Under the Influence of Alcohol	2
17030 - Liquor Law Violation (general)	1
30155 - Alcohol, Consuming in Public View	1
Total	46

Source: Police Department

SFPD Costs Related to Alcohol

The SFPD calculated the overtime costs incurred because of alcohol-related arrests. They did not calculate the costs of regular working hours dedicated to these arrests because the department assumes that officers would be occupied by other department duties if they were not responding to these incidents. Using an

hourly overtime rate of \$95, a Budget Manager at SFPD estimates that the 717 alcohol-related arrests in FY 2015-16 cost the department approximately \$168,495 in overtime costs, which represents approximately 3.6% of total overtime costs. This estimate assumes that these arrests resulted in a similar number of hours of overtime as the average of all arrests.

Sheriff

The Sheriff's Department incurs costs from holding individuals charged with crimes related to alcohol. They provided information on costs associated with Driving Under the Influence (DUI) and Release When Sober (RWS)—or being drunk in public—charges. DUI charges are classified as either felony or misdemeanor. According to the Chief Financial Officer (CFO) of the Sheriff's Department, a DUI is charged as a felony when there is an injury or if it is an individual's fifth DUI, but the four DUI felonies in the two-year period examined were due to injuries, not because it was an individual's fifth offense.

The Sheriff's Department provided data for individuals held for DUI or RWS charges only. Instances where an individual was charged with DUI and multiple other offenses at the same time (including homicide) were excluded because most of the cost for holding those individuals may be attributed to other more serious crimes. According to the CFO, DUI only charges (no other offenses) account for approximately 75% of all DUI charges. Cost estimates are based on the average daily cost to hold one person in custody.⁷ As illustrated in Exhibit 7 below, the cost of holding individuals charged with DUI or RWS was approximately \$144,254 in FY 2014-15 and declined to \$135,731 in FY 2015-16 due to a decline in RWS charges.

Exhibit 7: DUI and RWS Costs, FY 2014-15 and FY 2015-16

Charge	Count of Charge	Average Hours in Custody	Total Cost
FY 2014-15			\$144,254
DUI, Felony	1	13.0	100
DUI, Misdemeanor	755	8.7	50,482
Release When Sober	1556	7.8	93,672
FY 2015-16			\$135,731
DUI, Felony	3	18.7	516
DUI, Misdemeanor	644	8.8	52,478
Release When Sober	1035	8.7	82,737

Source: Sheriff's Department

⁷ Cost estimates represent cost allocation rather than incremental cost. The Sheriff's Department costs are driven primarily by staffing levels, including those for deputy sheriffs and medical staff, which do not vary with changes in the number of DUI or RWS charges.

RWS charges decreased in FY 2015-16 by one-third due to a decline in the number of intoxicated individuals brought to County Jail by the SFPD. According to the SFPD, this decline is likely due to the opening of the new Southern Station in the spring of 2015. The new Southern Station has a sobering cell, which allows the SFPD to hold intoxicated individuals at the station until they are sober rather than transferring these individuals to the County Jail.

Education, Prevention and Treatment Services

Human Services Agency

The Human Services Agency (HSA) incurs substance abuse treatment costs and case management costs for clients with alcohol-related disorders. These costs can be broken down into two major categories: 1) contracts and work orders that provide direct services; and 2) salaries and foster care aid payments that are connected to alcohol abuse. Contract and other cost details are provided below.

Richmond Area Multi-Services, Inc. (RAMS) substance abuse contract

The Human Services Agency (HSA) identified one contract and one work order⁸ with Richmond Area Multi-Services, Inc. (RAMS), a private, non-profit mental health agency, that have alcohol-related costs.

HSA funds a contract with RAMS to provide behavioral assessment, counseling, and career coaching for clients in the California Work Opportunity and Responsibility to Children (CalWORKs) program. In FY 2015-16, this contract amount was \$1,358,849, and approximately 7% of these clients (19 out of 287) had alcohol-related diagnoses. Therefore, we attribute \$95,119, or 7% of annual costs, to alcohol.

HSA also funds a work order to the Department of Public Health (DPH) to provide services to County Adult Assistance Programs (CAAP) participants that have substance abuse and/or mental health disorders. DPH contracts out these services to RAMS. In FY 2015-16, this work order amount was \$1,452,633, and approximately 43% of these clients (87 out of 204) had alcohol-related diagnoses. Therefore, we attribute \$624,632, 43% of total annual costs, to alcohol.

In FY 2015-16, the alcohol-related costs for RAMS services funded by HSA were \$719,751, as shown below.

⁸ HSA funds a work order to the Department of Public Health (DPH). DPH contracts these services out to RAMS.

Exhibit 8: RAMS Alcohol-Related Contract and Work Order, FY 2015-16

RAMS Contract/Work Order	Amount	Clients with Alcohol-Related Diagnoses (%)*	Alcohol-Attributable Amount
Services for CalWORKS clients	\$1,358,849	7%	\$95,119
Work order to DPH for CAAP clients	1,452,633	43%	624,632
Total			\$719,751

Source: Human Services Agency

*Includes clients dually diagnosed with substance abuse and mental health disorders

Ashbury House

The Ashbury House is a residential treatment center for mentally disabled and dually diagnosed mothers and their children. The program offers mental health and substance abuse treatment and allows families to remain intact while the mother receives rehabilitation and treatment services. The annual budget for Ashbury House is \$376,880, which is paid through a work order to the Department of Public Health. According to data provided by HSA, sixteen CalWORKS participants received substance abuse treatment from this program in the last year (September 2015 through August 2016), and five of these participants (31%) had alcohol-related diagnoses.⁹ Therefore, we attribute \$116,833 (31%) of annual costs, to alcohol.

Family and Children’s Services (FCS) Division Contracts and Other Costs

The Program Director at Family and Children’s Services (FCS), a division within HSA, estimates that 38% of clients served by FCS are receiving treatment for substance abuse, and of these cases, approximately 50% are receiving treatment for alcohol use—although they may also be receiving treatment for other drug use. FCS used these estimates to attribute a portion of substance abuse and case management costs, as well as foster care aid payments, to alcohol abuse. The percentages and methods used are based on the best information available. High quality data on the incidence of substance abuse generally and alcohol abuse specifically was not available.

FCS has three contracts or work orders that provide substance abuse services: a substance abuse contract for the Homeless Prenatal Program (HPP), a public health nurse (PHN) work order for Drug Dependency Court (DDC), and a Department of Public Health (DPH) clinician, who conducts substance abuse assessments. To estimate the alcohol-related portion of funding for these contracts and work orders, the Program Director multiplied the contract or work

⁹ The diagnosis of one of the 16 participants is unknown.

order amount by the percentage of clients receiving treatment for alcohol use (50%). HPP's substance abuse contract had a lower alcohol use estimate (20%). The FCS contract and work order alcohol-related direct service costs totaled \$162,006 in FY 2015-16, as shown in Exhibit 9 below. Note, FCS budgeted \$64,520 for a DPH clinician for substance abuse assessments, but this position was not filled in FY 2015-16.

Exhibit 9: FCS Alcohol-Related Work Order and Contracts, FY 2015-16

FCS Contract/Work Order	Amount	Estimated	Alcohol-
		Alcohol Related	Attributable
		Cases	Amount
HPP's substance abuse contract	\$576,068	20%	\$115,214
PHN* for DDC** work order	93,584	50%	46,792
DPH clinician for substance abuse assessments	0	50%	0
Total	\$669,652		\$162,006

Source: Human Services Agency

*Public Health Nurse

**Drug Dependency Court

In addition to the FCS contracts and work orders, which provide direct substance abuse services, FCS budgeted approximately \$112.5 million in FY 2015-16 for salaries and fringe benefits and foster care aid payments. To estimate the alcohol-attributable portion of these costs, the Program Director multiplied them by the percentage of cases with a substance abuse indicator (38%) and then by the percentage of those cases that are receiving treatment for alcohol use (50%). It is assumed that if these clients did not have a substance abuse problem, they would not require FCS services, and their children would not require foster care. This methodology attributes approximately \$21.3 million to alcohol-related cases, as illustrated in Exhibit 10 below.

Exhibit 10: FCS Alcohol-Related Salaries and Foster Care Aid Payments, FY 2015-16

Cost	FY15-16 Budget (in millions)	Cases with Substance Abuse Indicator (%)	Estimated Alcohol Related Cases (%)	Adjusted FY15-16 Budget (in millions)
Salaries/Fringe Benefits	\$47.6	38%	50%	\$9.0
Foster Care Payments	64.9	38%	50%	12.3
Total				\$21.3

Source: Human Services Agency

Public Health

The Department of Public Health funds several education and prevention programs related to alcohol abuse, as well as substance abuse treatment. The department provided funding data for two fiscal years. This section contains a brief description of each program funded, as well as the total funding amount.

CHEP Alcohol Prevention (DAO): Program, evaluation, fund development and other consultants and subcontractors related to the Deemed Approved Ordinance.

Community Substance Abuse Services: Grants and contracts for substance abuse services. To calculate the percentage of the total spent on services related to alcohol, we applied a 35% alcohol-attributable factor (AAF) to the total dollar amount, as advised by DPH. In FY 2015-16, this allocation includes \$542,550 for the Mission Council, which provides community-based, culturally competent alcohol and substance abuse treatment, and \$135,776 for the National Council on Alcoholism, which provides long-term recovery programs.

Jail Health Services – Alcohol Detoxification: Medical triage and detoxification checks for inmates brought to detoxification cells. There were 7,915 patients placed on alcohol detox in the jail in FY 2015-16.

Primary Prevention: Prevention programs that target populations at risk for alcohol abuse.

San Francisco General Hospital: Charges, costs, revenue, and uncompensated costs that were attributable to alcohol in FY 2014-15 and FY 2015-16. The hospital actually recouped all of the uncompensated costs attributable to alcohol in both fiscal years. For this report, we count the costs attributable to alcohol that were covered by public payers towards the total public health costs for alcohol.

SIP – AIDS Office: An early intervention service to reduce the impact of binge drinking, with the aim of improving participant quality-of-life and helping prevent new HIV infections in the community. Clients are recruited through active street outreach and assessed through a multi-step screening process designed to reach binge drinkers who are not yet accessing services related to drinking.

Sobering Center: A City-funded medical facility established in 2003 for treating intoxicated individuals. The Center includes stabilization beds and staff assigned to ensure that intoxicated clients safely sober up. Intoxicated clients who previously would have been transported to a hospital emergency room are instead triaged by paramedics and transported to the Sobering Center. Intoxicated individuals who

are inappropriately sent to the emergency room are transported instead to the Sobering Center via the Mobile Assistance Patrol (MAP) van.

Exhibit 11: DPH Spending on Alcohol-Related Services in FY 2014-15 and FY 2015-16

Program	FY 14-15 Costs Attributable to Alcohol	FY 15-16 Costs Attributable to Alcohol	FY 14-15 Clients Served	FY 15-16 Clients Served
CHEP Alcohol Prevention (DAO)	\$40,000	\$112,036	NA	NA
Community Substance Abuse Services	20,893,590	21,980,998	2,875	2,587
Jail Health Services: Alcohol Detox	0	738,118		7,915
Primary Prevention	2,226,503	2,226,503	NA	NA
SFGH Uncompensated Care (Public Payer)	2,661,100	1,103,835		
SIP - AIDS Office	0	75,000		300 outreach/ 200 counseling
Sobering Center	1,430,781	1,521,851	3,635	3,883
Total	\$27,251,974	\$27,758,341	6,510	14,885

Source: DPH

Property-Related Costs

Public Works

According to a 2009 streets litter audit, beer, wine, and liquor beverage containers account for about 1% of total large litter.¹⁰ This is likely an underestimate of total litter from alcohol waste because it does not include small glass fragments, which are categorized separately and not broken down by beverage container type. The Department of Public Works estimates that the labor cost directly attributable to alcohol containers litter cleanup of city property was \$420,000 in FY 2015-16.

Cost Summary

The City incurred an estimated \$54,828,628 in alcohol-related costs in FY 2015-16, as shown in Exhibit 12 below. Treatment, prevention and education costs accounted for the majority—91 percent—of these costs.

¹⁰ City of San Francisco Department of Environment Litter Survey Report, 2009.

Exhibit 12: Summary of the City's Costs Related to Alcohol Abuse, FY 2015-16

Department	Description	Amount
Public Safety		
Emergency Management	Service Calls	\$91,009
Fire	EMS Calls	3,947,557
Juvenile Probation	Secure Continuous Remote Alcohol Monitors costs	8,905
Police	Overtime costs for alcohol-related arrests	168,495
Sheriff	Cost of holding individuals with alcohol-related charges	135,731
Public Safety Total		\$4,351,697
Treatment, Prevention and Education Costs		
Human Services Agency	RAMS, Inc. behavioral health	\$719,751
	Ashbury House	116,833
	FCS substance abuse contracts	162,006
	FCS alcohol-related salaries and foster care aid payments	21,300,000
	Department Total	\$22,298,590
Public Health	CHEP Alcohol Prevention (DAO)	\$112,036
	Community Substance Abuse Services	21,980,998
	Jail Health Services: Alcohol Detox	738,118
	Primary Prevention	2,226,503
	SF General Uncompensated Care Costs (Public Payer)	1,103,835
	SIP – AIDS Office	75,000
	Sobering Center	1,521,851
Department Total		\$27,758,341
Treatment, Prevention and Education Total		\$50,056,931
Property-Related Costs		
Public Works	Alcohol-related cleanup costs	\$420,000
Property-Related Total		\$420,000
Total Costs		\$54,828,628

Source: Budget and Legislative Analyst Calculations

Economic Costs Related to Alcohol Consumption and Abuse

While the previous section estimates the number of incidents related to alcohol use, abuse, and education, and the associated costs to City departments, this section attempts to estimate the broader economic costs that result from alcohol use and abuse that are frequently cited in the academic literature. Using the methodologies that were developed to estimate costs accruing at the state and national levels, we developed estimates specific to the City and County of San Francisco. These costs accrue to individuals and private companies, as well as City departments, and we do not break out costs by payer. Therefore, these costs should be considered distinctly from (and may not be added to) costs to City departments calculated in the previous section.

The economic cost estimates developed by the Centers for Disease Control, the World Health Organization and other researchers associated with alcohol abuse are not insignificant. As stated above, the Centers for Disease Control and Prevention (CDC) estimates that excessive alcohol use cost the public \$249 billion in 2010 and that more than \$100 billion—or 40 percent—of these costs were ultimately paid by governments.¹¹

Rosen et al. (2008) found that alcohol use in California led to 921,929 alcohol-related problems, such as crime and injury, and 9,439 deaths in 2005.¹² They estimated that the economic cost associated with these incidents was \$38.5 billion, including \$5.4 billion for medical and mental health spending, \$25.3 billion in work productivity loss, and \$7.8 billion in criminal justice spending, property damage, and public program costs. Additionally, they estimated quality-of-life costs, such as costs associated with premature mortality and disability caused by injury, were approximately \$48.8 billion.

In this section, we estimate dollar values associated with the following alcohol-related economic costs:

- Years of life lost (YLLs) due to various illnesses
- Injury and fatality due to motor vehicle collisions
- Hospitalizations due to illness and injury
- Fetal alcohol syndrome
- High-risk sex
- Productivity loss
- Crime

¹¹ Sacks, Jeffrey J. et al. "2010 National and State Costs of Excessive Alcohol Consumption." *American Journal of Preventive Medicine* 2015, Volume 49, Issue 5, e73 - e79.

¹² Rosen, Simon M, Miller, Ted R, and Simon, Michele. "The Cost of Alcohol in California." *Alcoholism: Clinical and Experimental Research* 2008, Volume 32, Issue 11: 925-1936.

Estimates are presented in 2015 dollars and were converted using the Consumer Price Index (CPI) for medical care (for medical costs), the Employment Cost Index (for work costs), and the CPI for all items (for all other costs). We compare the total economic and quality-of-life costs to the personal income of all San Francisco residents in the cost summary section to provide context for these figures.

Years of Life Lost from Premature Mortality Due to Alcohol

A 2010 study estimated the Years of Life Lost (YLLs) among men and women in San Francisco due to long-term alcohol abuse.¹³ The authors gathered mortality statistics by the leading causes of death over the period from 2004–2007. They then estimated the Years of Life Lost for each individual by cause of death using statistical tables. Next, they multiplied the years of life lost by alcohol-specific population-attributable fractions (PAFs) from the World Health Organization’s Global Burden of Disease study, which are used to estimate the percentage of premature deaths and years of life lost that can be directly attributed to alcohol abuse. For example, the alcohol-specific population attributable-fraction for self-inflicted injuries is 15%.

Exhibit 13 below illustrates how alcohol-related harms among San Francisco males were calculated. A similar technique and table were produced for females. We removed from these totals Years of Life Lost due to Road Traffic accidents, as we calculate those Years of Life Lost and their associated costs in the next section on collisions and motor vehicle fatalities.

¹³ Katcher, Brian, Randy Reiter and Tomas Aragon. “Estimating alcohol-related premature mortality in San Francisco: use of population-attributable fractions from the global burden of disease study.” 2010

Exhibit 13: Estimated Years of Life Lost to San Francisco Males, 2004-2007

Rank	Cause	Deaths	Years of Life Lost	Population Attributed Factor of YLLs	YLLs attributed to alcohol
1	Ischemic heart disease	2,023	25,604.3		
2	HIV/AIDS	519	17,570.9		
3	Violence	255	12,921.9	28%	3,618
4	Lung, bronchus, trachea cancers	813	12,760.4		
5	Drug overdose, unintentional	357	12,665.7	21%	2,660
6	Self-inflicted injuries	304	10,667.1	15%	1,600
7	Hypertensive heart disease	529	8,685.3	28%	2,432
8	Cerebrovascular disease	682	7,818.0	9%	704
9	COPD ^a	541	6,492.4		
10	Alcohol use disorders	217	6,251.7	100%	6,252
11	Cirrhosis of the liver	205	5,448.8	60%	3,269
12	Lower respiratory infections	482	4,918.8		
13	Liver cancer	249	4,747.3	36%	1,709
14	Colon, rectum cancers	298	4,486.2		
	Other alcohol-attributable causes:				
	Falls	2,378		20%	476
	Low birthweight	1,760		2%	35
	Esophageal cancer	1,522		44%	670
	Mouth and oropharynx cancers	1,298		38%	493
	Drownings	1,128		24%	271
	Other neoplasms	871		10%	87
	Epilepsy	419		49%	205
	Unipolar depressive disorders	0		8%	0
	Summary:				
	All YLLs for SF males		220,700		
	Alcohol-attributable YLLs		24,481		
	% of YLLs attributable to alcohol		11.1%		

Source: Katcher, Reiter, Aragon. Estimating Alcohol-Related premature mortality in SF.

^aChronic Obstructive Pulmonary Disease

The table above uses the first of two methods to calculate the years of life lost, and only includes harms. The second method includes harms and some potential benefits from alcohol consumption, which reduced the estimated number of Years of Life Lost (YLLs).

For this report, we used the Years of Life Lost (YLL) estimate from the second method applied in the paper. As the model uses data that is relatively recent, we did not attempt to replicate the model with mortality statistics from later years. Exhibit 14 below illustrates the total Years of Life Lost estimated from the first method, then subtracts YLLs due to the potential beneficial effects of alcohol, and then includes a net YLL number for men (21,005) and women (2,539) in San Francisco between 2004 and 2007.

Exhibit 14: Estimated Years of Life Lost for Males and Females, 2004-2007

	Years of Life Lost	Population Attributable Factor	YLL attributable to alcohol
Alcohol-attributable harm, SF males			24,481
Benefits (based on all SF males):			
Ischemic heart disease	25,604.3	-14%	-3,585
Diabetes mellitus	4,038.3	-4%	-162
Total YLL avoided			-3,746
Net alcohol impact as YLL			21,005
Alcohol YLL %			9.9%

Alcohol-attributable harm, SF females			7,063
Benefits (based on all SF females):			
Ischemic heart disease	17,365.7	-10%	-1,737
Cerebrovascular disease	9,866.2	-27%	-2,664
Diabetes mellitus	3,088.7	-4%	-124
Total YLL avoided, females			-4,524
Net alcohol impact as YLL			2,539
Alcohol YLL %			2.0%

Source: Katcher, Reiter, Aragon. Estimating Alcohol-Related premature mortality in SF

Next, using these Years of Life Lost (YLLs) figures, we calculated an associated economic cost. A 2009 study estimates that the incremental cost of an additional year of life due to dialysis is \$129,090 per quality-adjusted life year.¹⁴ This figure is widely cited as the value of a statistical year of life and we use it here to estimate the economic cost of years of life lost.

Updated to 2015 dollars, we apply a cost per year of life lost of \$145,693, and estimate the number of years of life lost as 5,886 per year¹⁵ for an annual estimated cost of \$857,548,998 from years of life lost due to alcohol-related premature mortality, as shown in Exhibit 15 below.

¹⁴ Lee, Chris, Glenn Chertow, and Stefanos Zenios. "An Empiric Estimate of the Value of Life: Updating the Renal Dialysis Cost-Effectiveness Standard." International Society for Pharmacoeconomics and Outcomes Research. 2009.

¹⁵ 5,886 is one-quarter of the 21,005 years of life lost for men and 2,539 years of life lost for women for the four-year period from 2004 to 2007, as shown in Exhibit 14 above.

Exhibit 15: Estimated Annual Cost from Years of Life Lost (YLL) Due to Alcohol Consumption in San Francisco

Years of Life Lost	Four Year Period from 2004 to 2007	Per Year
Men	21,005	5,251
Women	<u>2,539</u>	<u>635</u>
Total	23,544	5,886
Cost per Year of Life Lost		X \$145,693
Total		\$857,548,998

Source: Budget and Legislative Analyst Calculations

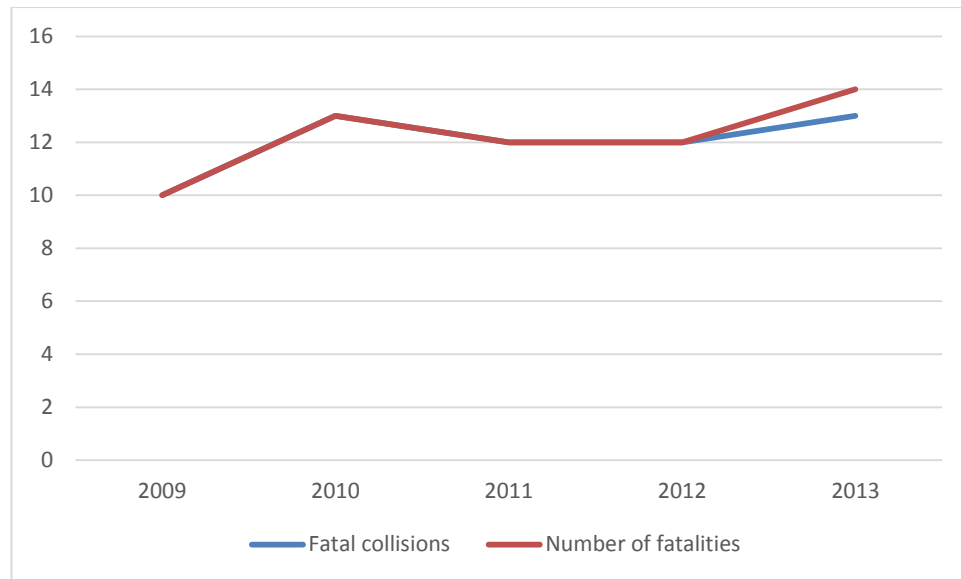
Collisions and Motor Vehicle Fatalities

The California Highway Patrol (CHP) makes the majority of Driving Under the Influence arrests in San Francisco, but the San Francisco Police Department (SFPD) as well as other law enforcement bodies also make DUI arrests and respond to alcohol-involved collisions, which are defined as “any motor vehicle traffic collision where a driver, pedestrian, or bicyclist had been drinking.”¹⁶ The CHP collects data on all alcohol-involved collisions from all law enforcement bodies and publishes data in an annual report. We present the most recent available data from this report below.

In 2013, there were 14 fatalities from 13 alcohol-involved collisions in the City. Exhibit 16 below shows alcohol-involved collisions with fatalities between 2009 and 2013. The number of fatalities remained relatively stable during this period. In 2013, one collision resulted in two fatalities. In every other year, one collision resulted in one fatality.

¹⁶ California Highway Patrol. “2013 Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions.”

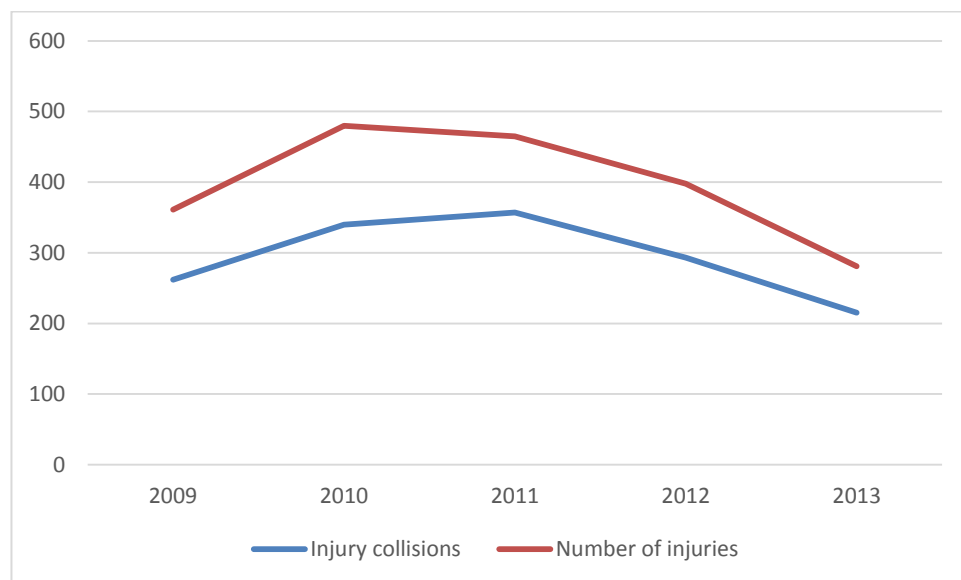
Exhibit 16: Alcohol-Involved Collisions with Fatalities, 2009-2013



Source: CHP, 2013 Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions

In 2013, there were 281 injuries from 215 alcohol-involved collisions in the City proper. The number of alcohol-involved collisions with injuries and the number of injuries have declined by 18 percent and 22 percent respectively since 2009 although there was a significant increase in both numbers in 2010, as illustrated in Exhibit 17 below.

Exhibit 17: Alcohol-Involved Collisions with Injuries, 2009-2013



Source: CHP, 2013 Annual Report of Fatal and Injury Motor Vehicle Traffic Collisions

The fatality and traffic collision numbers, only include those incidents that occurred within the City borders. We do not include incidents that occurred after an individual consumed alcohol in the City and then drove to another jurisdiction impaired.

Cost of Traffic Collisions Due to Alcohol

To calculate the costs associated with traffic collisions and the wide variety of potential outcomes from collisions (fatalities, various injuries, property damage), we used the 2013 data collected by the CHP from multiple law enforcement agencies for fatalities (Exhibit 16) and injuries (Exhibit 17), and the 2015 property damage data for incidents responded to and reported by the CHP.

We calculated the total cost of fatalities, injuries and property damage based on the following unit costs: medical, emergency services, market productivity, household productivity, insurance administration, workplace costs, legal costs, congestion costs, and quality-adjusted life years.¹⁷

The unit costs for vehicle accidents resulting in property damage, injury, and fatality are shown in Appendix I.

We estimate \$154,203,556 in annual economic and quality of life costs for vehicle collisions attributable to alcohol and resulting in property damage, injury and fatality. These estimates are based on the number of incidents reported by the CHP for 2013.

Exhibit 18: Total Estimated Cost Attributed to Traffic Collisions, 2015^{a, 18}

	Incidents	Medical Costs	Other Economic	Total Medical and Other Economic	Quality of Life
Fatalities	14	\$178,199	\$23,854,867	\$24,033,067	\$123,890,796
Injuries	281	293,889	958,358	1,252,246	4,588,935
Property Damage	109	3,179	435,333	438,512	0
Total		\$475,267	\$25,248,558	\$25,723,825	\$128,479,731
Total Economic and Quality of Life Costs					\$154,203,556

Source: Budget and Legislative Analyst Calculations

^a Unit costs are based on 2010 costs shown in Appendix I and adjusted to 2015 dollars.

Alcohol-Attributable Illness and Injury

We used the same methodology as Rosen et al. (2008) to estimate the medical and work loss costs associated with alcohol-attributable hospitalizations. These

¹⁷ Blincoe, L.J., Miller, T.R., Zaloshnja, E. and Lawrence, B.A. "The economic and societal impact of motor vehicle crashes." Washington, D.C.: National Highway Traffic Safety Administration, 2015.

¹⁸ Property damage data are incidents in which the CHP responded in 2013; fatality and injury data was collected by the CHP from multiple law enforcement agencies in 2013.

costs do not include costs to injured parties who did not consume alcohol. To estimate the number of illnesses and injuries in San Francisco, we used data from the 2014 California Office of Statewide Health Planning and Development Patient Discharge Data, which includes data on treatment from California hospitals. We tracked the cause of hospitalization using International Classifications of Disease and Related Health Problems Series 9 codes.

We used the Alcohol-Related Disease Impact tool developed by the U.S. Center for Disease Control and Prevention to determine the proportion of illness and injury hospitalizations attributable to alcohol consumption. We used the tool's Alcohol-Attributable Fractions for the State of California and examined health effects of "medium" alcohol consumption—typically defined as more than 3 drinks per day for men and 1.5 drinks per day for women—because this category best reflects average alcohol consumption in San Francisco.¹⁹ The Alcohol-Related Disease Impact tool attributes all cases of illness and injury for which alcohol is the only cause to alcohol consumption and a percentage of additional cases for which alcohol may be one of several potential causes. For example, the Alcohol-Related Disease Impact tool attributes 100% of alcohol poisoning cases and 84% of acute pancreatitis cases to alcohol consumption.

Medical costs were calculated from Office of Statewide Health Planning and Development data and multiplied by the average cost-to-charge ratio²⁰ at hospitals that treated San Francisco residents to reflect actual costs to hospitals.²¹ Most payers negotiate with hospitals to pay less than the reported charges.²² We do not include costs for pharmaceuticals post hospitalization due to a lack of data. We estimated work loss due to hospitalization by multiplying the number of days in the hospital by the average lost earnings per day.²³ This does not include lost workdays post hospitalization.

We estimate that the economic costs of alcohol-attributable illness were \$33,185,870 in 2014, as shown in Exhibit 19 below. The economic costs associated with alcohol-attributable cholelithiasis are negative because alcohol consumption reduces the incidence of this illness. If there were no alcohol consumption in San Francisco, we would expect 6.2 additional hospitalizations for cholelithiasis with economic costs of \$121,679.

¹⁹ Data from the 2003 California Health Interview Survey show that adults in San Francisco consume two alcoholic drinks per day on average.

²⁰ Defined as (Total Operating Expenses – Other Operating Revenue) ÷ Total Gross Patient Revenue

²¹ California Office of Statewide Health Planning and Development. Hospital Annual Financial Data. 2014.

²² Max, Wendy, Wittman, Friedner, Stark, Brad and West, Allyson. "The Cost of Alcohol Abuse in California: A Briefing Paper." Institute for Health & Aging. UC San Francisco: Institute for Health and Aging. 2004. Retrieved from: <http://escholarship.org/uc/item/209665xz>

²³ Rosen, Simon M, Miller, Ted R, and Simon, Michele. "The Cost of Alcohol in California." *Alcoholism: Clinical and Experimental Research* 2008, Volume 32, Issue 11: 925-1936.

Exhibit 19: Alcohol-Attributable Hospitalizations and Economic Costs of Illness, 2014

Illness	Incidents w/ Hospital Stay	Days in hospital	Medical costs	Work loss	Total
Acute pancreatitis	107.0	555.4	\$2,115,501	\$111,766	\$2,227,267
Alcohol abuse	42.0	182.0	631,868	36,628	668,496
Alcohol dependence syndrome	44.0	320.0	443,097	64,400	507,497
Alcohol poisoning	5.0	10.0	96,207	2,013	98,220
Alcoholic gastritis	30.0	72.0	352,049	14,490	366,539
Alcoholic liver disease	161.0	1,129.0	5,407,296	227,211	5,634,507
Alcoholic polyneuropathy	1.0	0.0	20,637	0	20,637
Alcoholic psychosis	734.0	4,651.0	17,038,058	936,014	17,974,072
Breast cancer (females only)	1.2	3.9	23,760	777	24,537
Cholelithiasis	-6.2	-25.2	(121,679)	(5,069)	(126,748)
Chronic hepatitis	0.0	0.1	486	22	508
Chronic pancreatitis	20.2	76.4	288,328	15,384	303,712
Epilepsy	52.8	438.0	1,035,254	88,147	1,123,402
Esophageal cancer	0.4	5.5	12,064	1,107	13,171
Esophageal varices	3.6	12.0	80,000	2,415	82,415
Gastroesophageal hemorrhage	23.0	92.6	513,079	18,634	531,713
Hypertension	9.6	330.0	273,354	66,403	339,757
Laryngeal cancer	0.5	6.4	34,562	1,280	35,842
Liver cancer	4.3	31.2	117,433	6,273	123,706
Liver cirrhosis unspecified	26.4	172.4	1,211,535	34,696	1,246,231
Low birth weight, prematurity, IUGR*, death	2.7	18.8	68,149	3,784	71,933
Oropharyngeal cancer	0.4	7.4	25,275	1,497	26,772
Portal hypertension	7.2	24.0	171,290	4,830	176,120
Spontaneous abortion (females only)	0.6	0.6	2,622	129	2,751
Stroke hemorrhagic	8.5	89.5	532,547	18,016	550,563
Stroke ischemic	34.1	185.1	966,910	37,246	1,004,156
Supraventricular cardiac dysrhythmia	9.3	36.0	150,861	7,236	158,097
Total	1,322.7	8,424.0	\$31,490,543	\$1,695,327	\$33,185,870

Source: Budget and Legislative Analyst Calculations based on 2014 California Office of Statewide Health Planning and Development data

*Intra-uterine growth retardation

We estimate the economic costs of alcohol-attributable injuries was \$42,727,474 in 2014, as shown in Exhibit 20 below. The majority of these costs (86 percent) are from hospitalizations for fall injuries.

Exhibit 20: Alcohol-Attributable Hospitalizations and Economic Costs of Injury, 2014

Injury	Hospitalizations	Days in hospital	Medical costs	Work loss	Total
Aspiration	2.5	9.2	\$39,114	\$1,847	\$40,961
Fall injuries	806.1	30,103.4	30,476,804	6,058,301	36,535,105
Fire injuries	8.4	95.8	668,815	19,272	688,087
Firearm injuries	0.7	3.4	28,571	688	29,259
Hypothermia	3.8	30.2	168,255	6,086	174,341
Motor-vehicle non-traffic crashes	1.4	5.9	28,844	1,195	30,039
Occupational and machine injuries	20.7	100.4	569,282	20,214	589,496
Other road vehicle crashes	15.8	53.3	505,585	10,723	516,308
Poisoning (not alcohol)	82.9	364.0	2,124,178	73,245	2,197,423
Suicide	68.8	442.8	1,837,352	89,103	1,926,455
Total	1,011.2	31,208.3	\$36,446,800	\$6,280,674	\$42,727,474

Source: Budget and Legislative Analyst Calculations based on 2014 California Office of Statewide Health Planning and Development data

Fetal Alcohol Syndrome

To estimate the number of new cases of fetal alcohol syndrome in San Francisco in 2015, we applied the national average rate of two cases per every thousand live births to the average annual number of live births in San Francisco.^{24,25} This gave us an estimate of 18 new cases of fetal alcohol syndrome in 2015.

We calculated medical, work loss, and quality-of-life costs based on estimates from Rosen et al. 2008. The authors calculated medical costs by analyzing the specific types of treatment required for fetal alcohol syndrome and the proportion of cases requiring medical treatment. The authors calculated work loss costs

²⁴ Harwood, Henrick J. and Fountain, Douglas. and Livermore, Gina. *The economic costs of alcohol and drug abuse in the United States, 1992*. NIH Publication No. 98-4327. U.S. Dept. of Health and Human Services, Rockville, MD 1998.

²⁵ California Department of Public Health. *County Health Status Profiles 2015*. Available at: <https://www.cdph.ca.gov/programs/ohir/Documents/OHIRProfiles2015.pdf>. Accessed December 1, 2016.

based on the proportion of fetal alcohol syndrome cases with intellectual disabilities and the associated productivity impairment.²⁶ Quality-of-life costs were not available for fetal alcohol syndrome, so the authors conservatively estimated these costs based on other conditions using estimates from Miller et al. (2006b).²⁷ Using these cost estimates, we calculate the economic costs (including medical and work loss costs) of fetal alcohol syndrome were \$20,630,134 and the quality-of-life costs were \$14,821,620 in 2015, as illustrated in Exhibit 21.

Exhibit 21: Fetal Alcohol Syndrome Economic and Quality-of-Life Costs, 2015

Incidents	Medical costs	Work loss	Total Economic Costs	Quality-of-life costs
18	\$8,685,036	\$11,945,098	\$20,630,134	\$14,821,620

Source: Budget and Legislative Analyst Calculations

High-Risk Sex

Rosen et al. (2008) estimated the cost of unwanted pregnancy, HIV, and other sexually transmitted diseases from alcohol-attributable incidents of adolescent (ages 12 to 20) high-risk sex²⁸ in California. Due to a lack of data, the authors do not estimate the cost of adult high-risk sex. The authors estimate the number of incidents in California using national incidence data of adolescent high-risk sex and assume that 9.15% of incidents of risky adolescent sex are attributable to alcohol, based on previous research.²⁹ Cost estimates are based on estimates from Miller et al. (2006b). We adjust Rosen et al.’s (2008) State estimates based on the number of adolescents³⁰ in San Francisco in 2015. Using this methodology, we calculate the economic costs of high-risk sex were \$3,570,270 and the quality-of-life costs were \$5,313,710 in 2015, as illustrated in Exhibit 22.

Exhibit 22: High Risk Sex Economic and Quality-of-Life Costs, 2015

Incidents	Medical costs	Work loss	Total Economic Costs	Quality-of-life costs
543	\$1,835,601	\$1,734,669	\$3,570,270	\$5,313,710

Source: Budget and Legislative Analyst Calculations

²⁶ Methodology for medical and work loss costs from Harwood et al. (1998)

²⁷ Miller, Ted R, Levy, David T, and Spicer, Rebecca S. "Societal Costs of Underage Drinking." J Stud Alcohol 67:519-528. 2006b.

²⁸ Defined as unprotected sex

²⁹ Biglan, Anthony, Brennan, Patricia A, Foster, Sharon L, and Holder, Harold D. *Helping Adolescents At Risk: Prevention of Multiple Problem Behaviors*. Guilford Press, New York. 2004.

³⁰ Ages 10 to 19, based on the American Community Survey age brackets

Productivity Losses Due to Alcohol

A 2008 report on the economic costs of alcohol in California includes a method for calculating work and productivity losses due to alcohol dependence.³¹ It assumes that 17.1% of males over age 18 have been alcohol dependent at some point in their lifetime, based on previous research.³² The report also finds that even men who had been alcohol dependent and who then recovered continued to experience lower earnings.

It then estimates the total one-year work loss of the alcohol dependent males using an estimate of the monthly earnings reduction for men because of alcohol dependence. The estimated monthly earnings reduction was \$433 in 2005 dollars and is adjusted to be \$541 in 2015 salary dollars for our purposes. The authors then multiply the estimated annual work loss by a fringe benefits ratio of 0.33, to calculate the total annual lost earnings. These costs do not include losses incurred by employers due to employee alcohol dependence.

Using this methodology, we assumed that 17.1% of the male population over the age of 18 years has been alcohol dependent at one point in time. Multiplying the total male population that is over the age of 18 and under the age of 65 (to estimate the working age population) in San Francisco as of 2015 by 17.1% and then by the total annual loss in earnings (lost wages and fringe benefits), we calculate total lost earnings of approximately \$468,854,174, as illustrated in Exhibit 23 below.

Exhibit 23: Estimated Lost Earnings among Alcohol-Dependent Males in San Francisco (2015 Wages)

Alcohol-dependent male population (ages 18-65)	Total annual wages lost (per person)	Estimated fringe benefits per person	Total lost earnings per person	Total Lost Earnings Among Alcohol-Dependent Males
54,303	\$ 6,492	\$ 2,142	\$ 8,634	\$468,854,174

Source: Budget and Legislative Analyst Calculations

Crime

A large share of violent and property crimes involve alcohol. Previous studies have estimated the economic costs, as well as the intangible quality-of-life costs, from alcohol-attributable crime.^{33,34} We use the same methodology to estimate the

³¹ Rosen, Simon, Ted Miller, and Michele Simon. "The Cost of Alcohol in California." November, 2008

³² Hasin et al. "Prevalence, correlates, disability and comorbidity of DSM-IV alcohol abuse and dependence in the United States: results from the national epidemiologic survey on alcohol and related conditions." 2007.

³³ Rosen, Simon M, Miller, Ted R, and Simon, Michele. "The Cost of Alcohol in California." *Alcoholism: Clinical and Experimental Research* 2008, Volume 32, Issue 11: 925-1936.

number of alcohol-attributable crimes that occurred in 2015 in San Francisco and the associated costs to society.

We gathered data on the number of property crimes—burglary, larceny, and motor vehicle theft—and violent crimes—assault, homicide, rape, and robbery—from the SFPD’s year-end crime statistics report. We estimated the number of child abuse incidents based on the rate of substantiated child abuse in San Francisco County (6 per 1,000 children ages 0-17), the child population, and the share of child abuse cases that are sexual in California (4.9%).^{35,36}

We estimated the number of crimes attributable to alcohol using previously established methodology. Miller et al. (2006) estimated the share of crimes committed under the influence of alcohol based on a weighted average of surveys of prison inmates. We combined these estimates with the assumption that 50% of violent crimes and 10% of property crimes committed under the influence of alcohol are alcohol-attributable to estimate the number of alcohol-attributable incidents.^{37,38} For example, if 42% of homicides are committed under the influence of alcohol, and we assume that half of these cases are directly caused by alcohol consumption, we arrive at an alcohol-attributable fraction for homicide of 21% (42% multiplied by 50%). Exhibit 24 below shows alcohol-attributable crimes in 2015.

³⁴ Miller, Ted R, Levy, David T, Cohen, Mark A, and Cox, Kenya LC. “Costs of Alcohol and Drug-Involved Crime.” *Prev Sci* 7:333-342. 2006.

³⁵ California Department of Social Services & University of California at Berkeley, Child Welfare Dynamic Report System. "2014 California Child Population (0-17) and Children with Child Maltreatment Allegations, Substantiations, and Entries Substantiations."

³⁶ U.S. Department of Health & Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children’s Bureau. (2016). Child maltreatment 2014. Available from <http://www.acf.hhs.gov/programs/cb/research-data-technology/statistics-research/child-maltreatment>

³⁷ Harwood, Henrick J. and Fountain, Douglas. and Livermore, Gina. *The economic costs of alcohol and drug abuse in the United States, 1992*. NIH Publication No. 98-4327. U.S. Dept. of Health and Human Services, Rockville, MD 1998.

³⁸ Miller, Ted R, Levy, David T, Cohen, Mark A, and Cox, Kenya LC. “Costs of Alcohol and Drug-Involved Crime.” *Prev Sci* 7:333-342. 2006.

Exhibit 24: Alcohol-Attributable Crime Incidents, 2015

Crime	Incidents	Share of incidents involving alcohol	Share of incidents involving alcohol-attributable to alcohol	Alcohol-attributable incidents
<i>Property crime</i>				
Burglary	5,186	0.36	0.1	187
Larceny	40,918	0.29	0.1	1,187
Motor theft	6,915	0.26	0.1	180
<i>Violent crime</i>				
Assault	2,703	0.41	0.5	554
Child abuse/ neglect	704	0.09	0.5	32
Child sexual abuse	36	0.17	0.5	3
Homicide	52	0.42	0.5	11
Rape	344	0.39	0.5	67
Robbery	3,610	0.33	0.5	596

Source: SFPD CompStat Year End Report; CDSS and UC Berkeley, Child Welfare Dynamic Report System; Miller et al. 2006

We estimated the cost of each alcohol-attributable crime based on published estimates. These costs include medical and mental health costs, legal and other public programs costs, property damage, work loss, and quality-of-life costs. We estimate that there were 2,817 alcohol-attributable crimes in 2015, with associated economic costs of \$60,624,781 and quality-of-life costs of \$59,275,431, as illustrated in Exhibit 25 and Exhibit 26 below.

Exhibit 25: Alcohol-Attributable Incidents and Economic Costs for Crime, 2015

Crime	Alcohol Events	Medical & mental health costs	Legal and other public programs costs	Property damage	Work loss	Total
<i>Property crime</i>						
Burglary	187	\$2,703	\$950,945	\$419,330	\$4,908	\$1,377,886
Larceny	1,187	20,016	3,671,172	754,336	18,693	4,464,218
Motor theft	180	2,602	1,178,574	1,372,753	17,009	2,570,938
<i>Subtotal</i>	<i>1,554</i>	<i>\$25,321</i>	<i>\$5,800,691</i>	<i>\$2,546,419</i>	<i>\$40,610</i>	<i>\$8,413,042</i>
<i>Violent crime</i>						
Assault	554	989,844	5,414,862	33,424	968,427	7,406,557
Child abuse	35	198,562	81,769	227	46,274	326,833
Homicide	11	590,799	3,791,626	2,962	21,617,537	26,002,924
Rape	67	765,027	4,067,081	16,169	288,995	5,137,273
Robbery	596	2,468,081	8,788,709	1,041,590	1,039,771	13,338,152
<i>Subtotal Violent</i>	<i>1,263</i>	<i>\$5,012,313</i>	<i>\$22,144,047</i>	<i>\$1,094,372</i>	<i>\$23,961,004</i>	<i>\$52,211,739</i>
Total	2,817	\$5,037,634	\$27,944,739	\$3,640,792	\$24,001,616	\$60,624,781

Source: Budget Analyst Calculation; Unit cost estimates derived from Rosen et al. 2008

Exhibit 26: Quality-of-Life Costs for Crime, 2015

Crime	Quality-of-life costs
<i>Property crime</i>	
Burglary	\$107,272
Larceny	0
Motor theft	103,256
Subtotal Property	\$210,528
<i>Violent crime</i>	
Assault	7,086,768
Child abuse	3,006,095
Homicide	34,456,400
Rape	8,944,232
Robbery	5,571,408
Subtotal Violent	\$59,064,903
Total	\$59,275,431

Source: Budget Analyst Calculation; Unit cost estimates derived from Rosen et al. 2008 and Miller et al. 1996

Cost Summary

Based on the information we were able to collect, we estimate the alcohol-related economic costs and quality-of-life costs were \$655,316,528 and \$1,065,439,490 respectively in 2015, as shown in Exhibit 27 below. As mentioned previously, these costs accrue to individuals and private companies, as well as City departments. Therefore, these costs should be considered distinctly from (and may not be added to) costs to City departments calculated in the previous section.

According to data from the Bureau of Economic Analysis, the personal income of all San Francisco residents was \$89,533,450,000 in 2015. Thus, the economic and quality-of-life costs combined are equivalent to two percent of total personal income in the City.

Exhibit 27: Economic and Quality-of-Life Costs (2015 dollars)

Problem	Medical costs	Lost work/ economic costs	Total economic costs	Quality-of-life costs
Death - Years of Life Lost	\$0	\$0	\$0	\$857,548,998
Traffic Collisions	475,267	25,248,558	25,723,825	128,479,731
Illness	31,490,543	1,695,327	33,185,870	0
Injury	36,446,800	6,280,674	42,727,474	0
Fetal Alcohol Syndrome	8,685,036	11,945,098	20,630,134	14,821,620
High-Risk Sex Alcohol Dependence	1,835,601	1,734,669	3,570,270	5,313,710
Productivity losses	0	468,854,174	468,854,174	0
Violent Crime	5,012,313	47,199,426	52,211,739	59,064,903
Property Crime	25,321	8,387,721	8,413,042	210,528
Total	\$83,970,881	\$571,345,647	\$655,316,528	\$1,065,439,490

Outlet Density Analysis and Mapping

Numerous academic studies argue that the density of alcohol outlets contributes to negative outcomes associated with alcohol abuse. A meta-study from 2009 published in the American Journal of Preventative Medicine, for example, found a positive correlation between alcohol outlet density and consumption, such that when outlet density increased, so did consumption and vice versa. It also found a positive correlation between outlet density and other negative social impacts, such as medical harms, injuries, crime and violence.³⁹

California’s Department of Alcoholic Beverage Control (ABC) regulates the number of on-sale and off-sale alcohol outlets that may exist in a particular jurisdiction. “On-sale” establishments, such as bars and restaurants, sell alcoholic beverages to be consumed onsite, and “off-sale” establishments, such as grocery stores and liquor stores, sell alcoholic beverages to be consumed offsite.

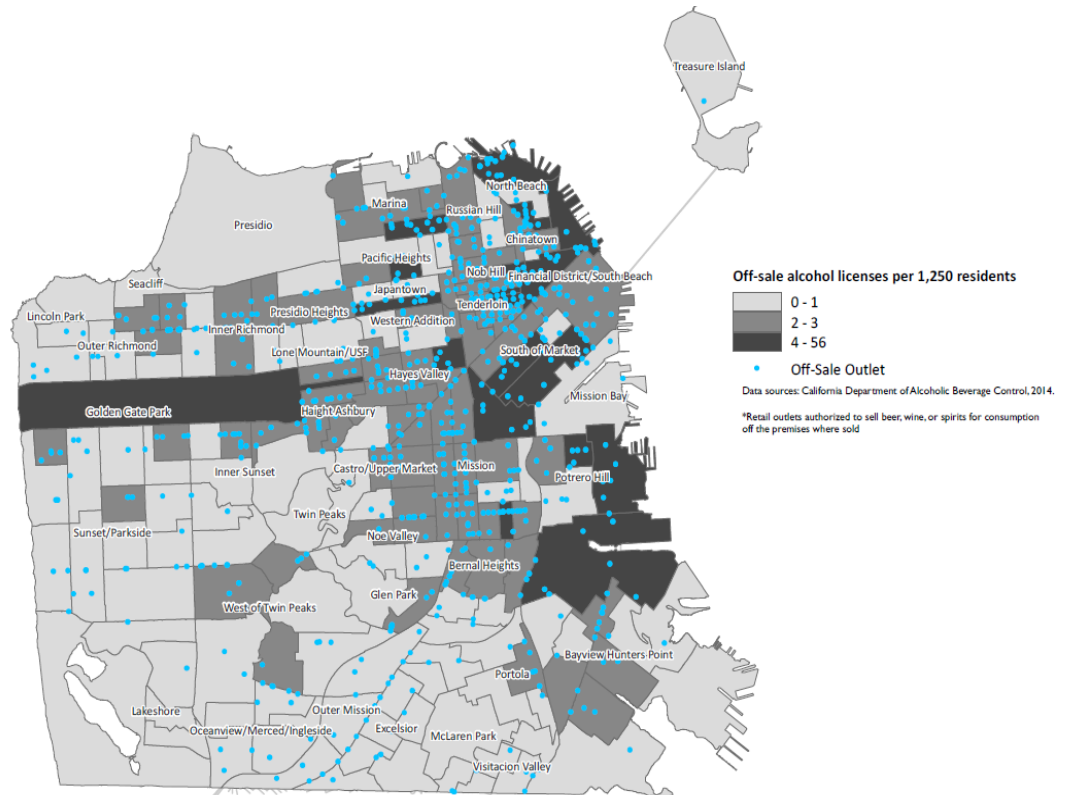
In this section, we examine the density of both on-sale and off-sale outlets in San Francisco, the correlation between crime and outlet density, and the disproportionate share of alcohol outlets located in areas with a greater proportion of residents with incomes below the poverty threshold.

³⁹ Campbell, Alexia, Hahn, Robert, Elder, Randy. “The Effectiveness of Limiting Alcohol Outlet Density as a Means of Reducing Excessive Alcohol Consumption and Alcohol-Related Harms.” American Journal of Preventative Medicine, 2009.
<https://www.thecommunityguide.org/sites/default/files/assets/EffectivenessLimitingAlcoholOutletDensityMeansReducingExcessiveAlcoholConsumptionAlcohol-RelatedHarms1.pdf>

Outlet Density Maps

The Department of Public Health produced a map in 2014 that illustrates the density of off-sale alcohol licenses per 1,250 residents by Census tract.

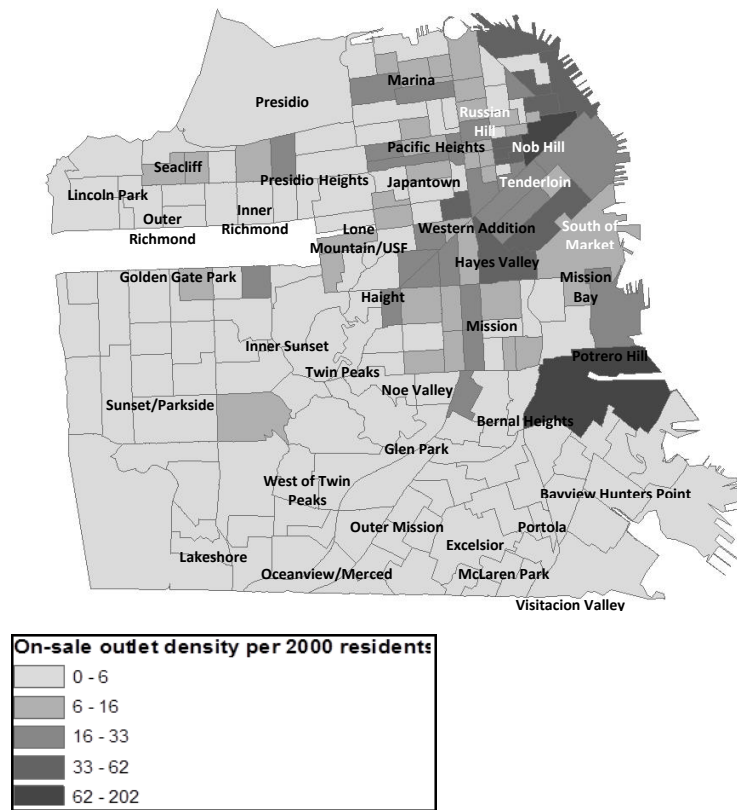
Exhibit 28: Density of Off-Sale Alcohol Outlets, 2014



Source: San Francisco Department of Public Health

Similarly, the Budget and Legislative Analyst produced a map for this report illustrating the density of on-sale outlet licenses per 2,000 residents by Census tract. While the color-coding in the map below is similar to the map shown above, it is important to note that the number of on-sale outlets per 2,000 residents is in fact much higher than for the off-sale outlets. This is intuitively correct, as many restaurants and other dining establishments serve alcohol for consumption on the premises.

Exhibit 29: Density of On-Sale Alcohol Outlets, 2016



Source: Budget and Legislative Analyst

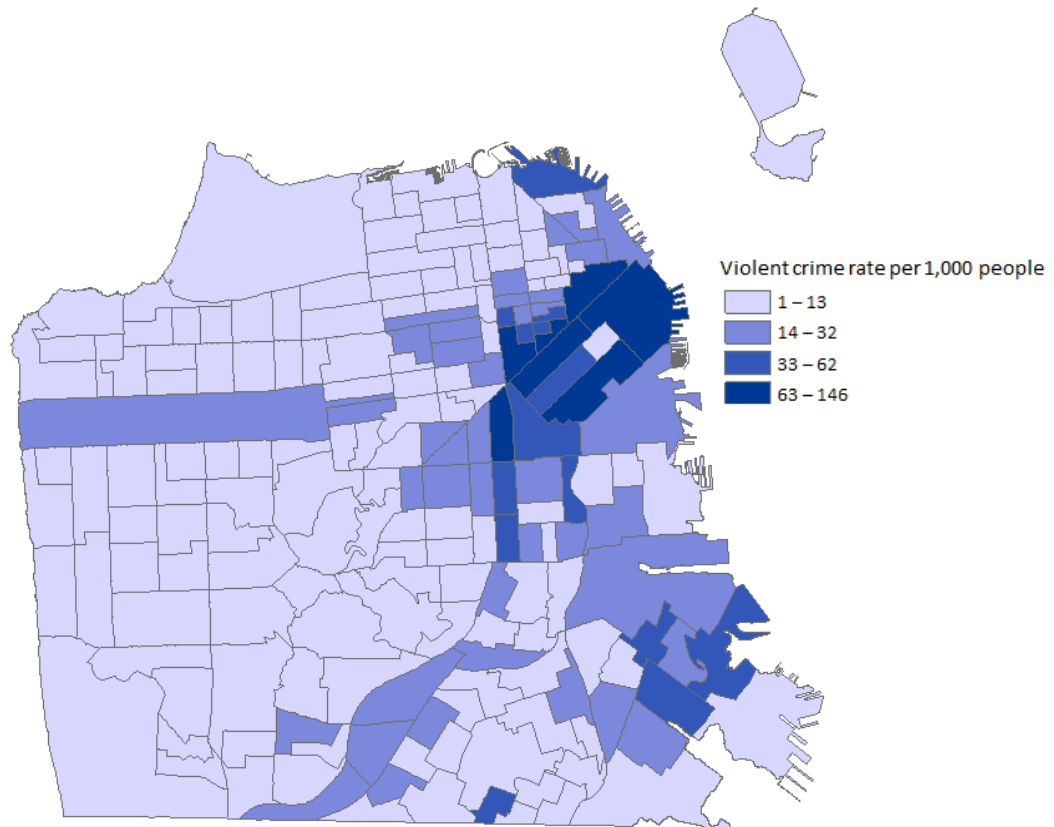
Violent and Property Crime Maps

As discussed earlier in this report, a large share of violent and property crimes involve alcohol. We mapped 2015 SFPD crime incidents by census tract for both violent crime and property crime and compared the density of crime incidents with the density of alcohol-sales outlets (as shown above).⁴⁰

We can see that areas with a higher density of alcohol sales outlets (both on-sale and off-sale) also have a higher density of violent crime (per 1,000 people), as shown in Exhibit 30 below.

⁴⁰ Note SFPD crime incidents are derived from the SFPD Crime Incident Reporting system. A reported crime may not actually represent a crime committed—the numbers of violent and property crime incidents are much higher than the annual crime figures reported by SFPD. We removed incidents that were resolved as “unfounded” by the SFPD, but there may be additional reported incidents that do not actually represent a crime. Additionally, crimes that are never reported are not reflected in the data.

Exhibit 30: Violent Crime Rate Density, 2015



Source: SFPD Crime Incidents

While violent crime incidents occur in areas that also have on-site and off-site alcohol establishment density, our data does not confirm that the presence of alcohol establishments is a contributing factor to violent crime. Other factors could contribute, such as the prevalence of drugs, to the incidence of violent crime.

However, the scatter plots below show a positive correlation between density of alcohol sales outlets and incidence of violent crimes by census tract even if the correlation does not confirm causation.⁴¹ Census tracts with one additional off-sales outlet have on average 1.9 additional violent crime incidents per 1,000 people. Census tracts with one additional on-sales outlet have on average 0.5 additional violent crime incidents per 1,000 people.

⁴¹ Note scatter plots below remove two outliers: Census Tracts 9803 (Golden Gate Park) and 9809 (located in the Bayview Neighborhood and comprised mostly of Production, Distribution and Repair Zoning Districts). These two census tracts have the lowest population counts out of all census tracts in San Francisco, which result in higher density estimates compared to other census tracts.

Exhibit 31: Off-Sale Outlet Density v. Violent Crime Density (per 1,000 people)

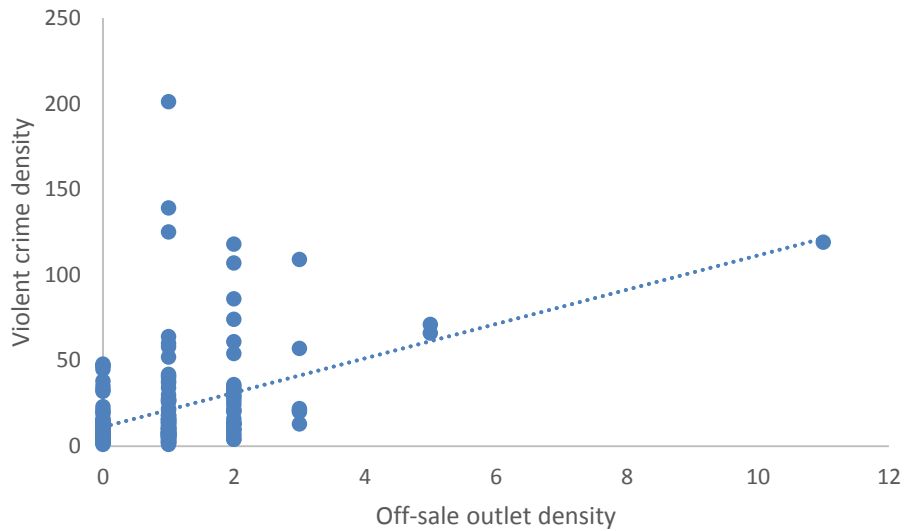
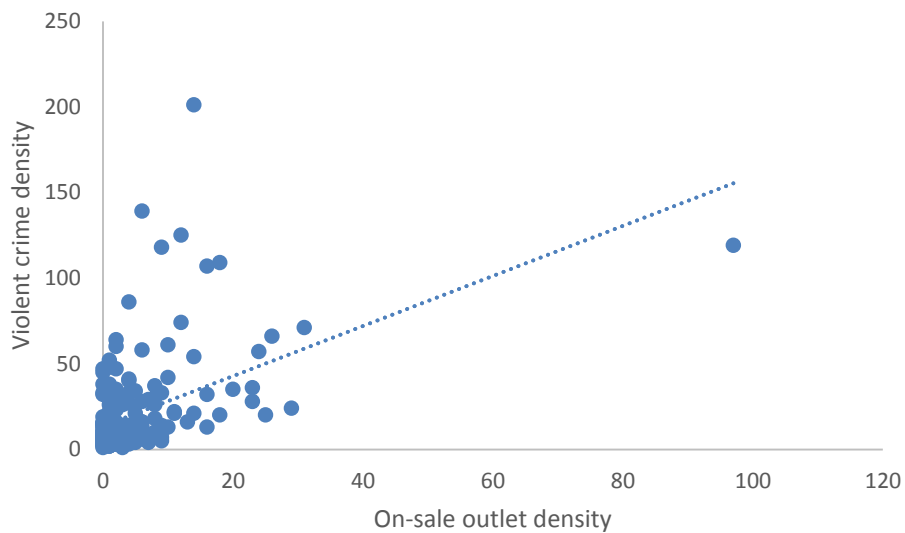
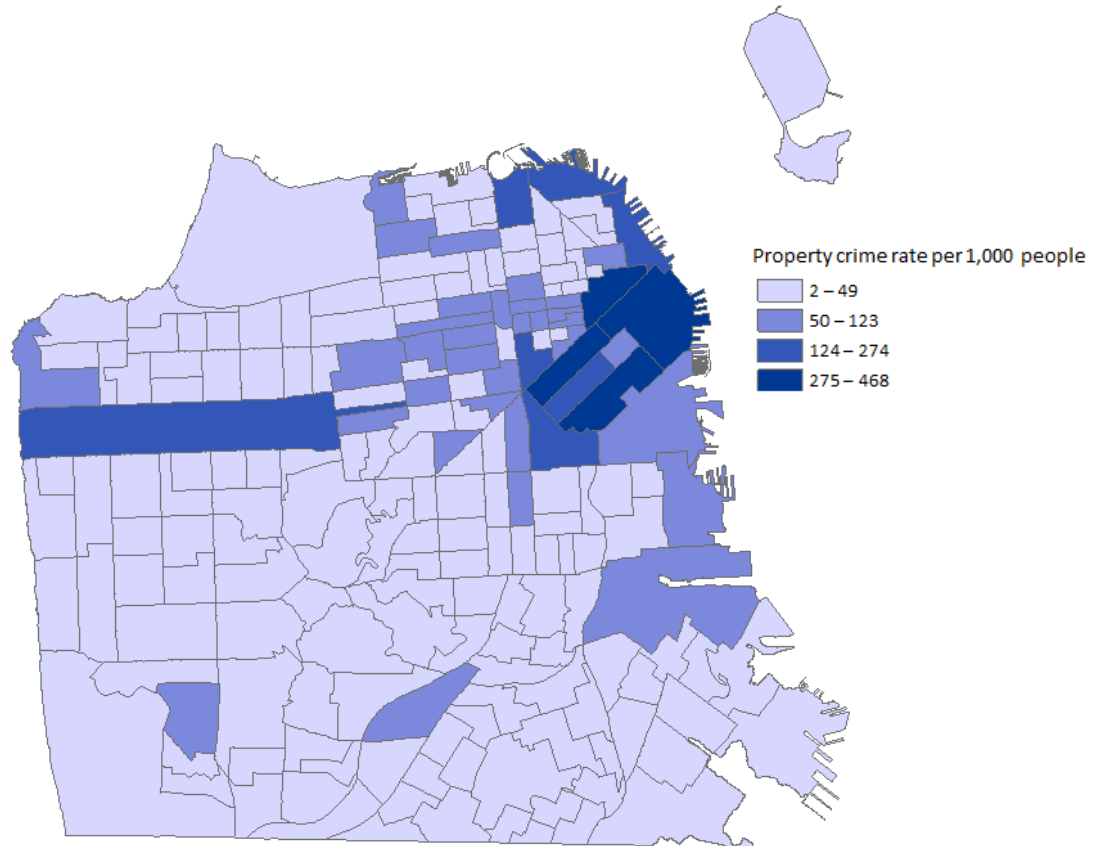


Exhibit 32: On-Sale Outlet Density v. Violent Crime Density (per 1,000 people)



We can see a similar pattern for property crime. Areas with a higher density of alcohol sales outlets (both on-sale and off-sale) also have a higher density of property crime (per 1,000 people), as shown in Exhibit 33 below.

Exhibit 33: Property Crime Density, 2015



Source: SFPD Crime Incidents

As noted above, while property crime incidents occur in areas that also have on-site and off-site alcohol establishment density, our data does not confirm that the presence of alcohol establishments is a contributing factor to property crimes, which could result from other factors.

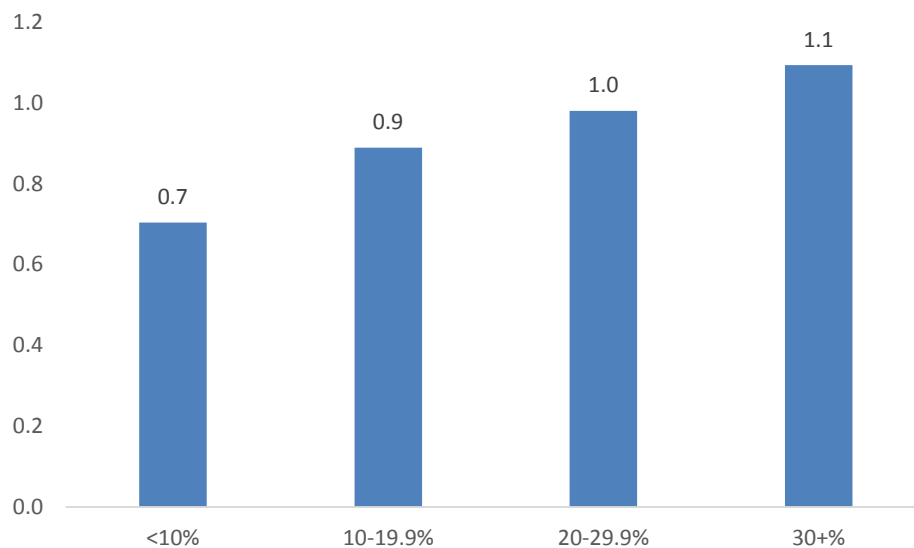
However, scatter plots below show a positive correlation between density of alcohol sales outlets and density of property crimes by census tract even if correlation does not confirm causation.⁴² Census tracts with one additional off-sales outlet have on average 8.2 additional property crime incidents per 1,000 people. Census tracts with one additional on-sales outlet have on average 2.7 additional property crime incidents per 1,000 people.

⁴² Scatter plots below remove two outliers: Census Tracts 9803 (Golden Gate Park) and 9809 (located in the Bayview Neighborhood and comprised mostly of Production, Distribution and Repair Zoning Districts). As noted previously, these two census tracts have the lowest population counts out of all census tracts in San Francisco, which result in higher density estimates compared to other census tracts.

Equity Analysis

Census tracts with a higher density of alcohol sales outlets also tend to have a higher proportion of residents with incomes below the poverty threshold.⁴³ At 1.1 per 1,000 residents, the median off-sale outlet density of census tracts with 30% or more residents below the poverty threshold is more than 1.5 times that of census tracts with less than 10% of residents below the poverty threshold, as shown in Exhibit 36 below.

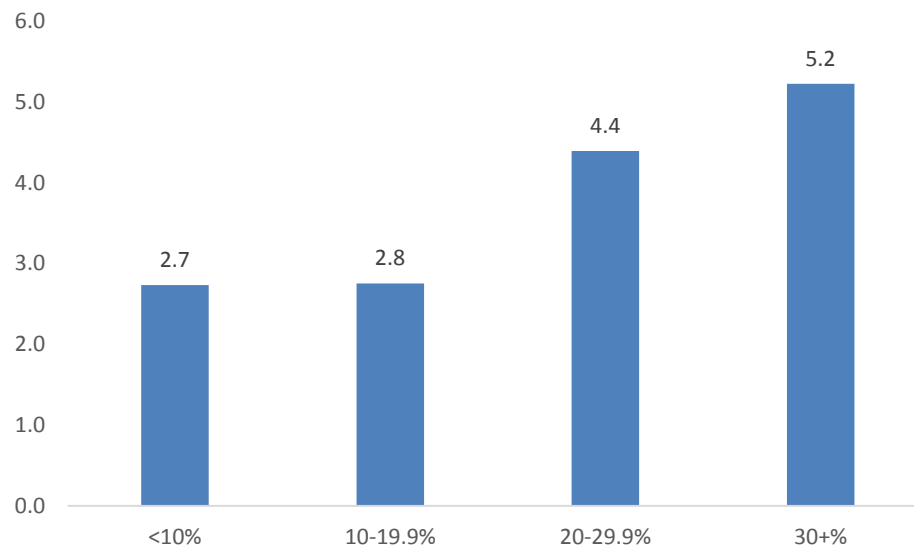
Exhibit 36: Median Off-Sale Outlet Density by Percentage of Population below Poverty Threshold



At 5.2 per 1,000 residents, the median on-sale outlet density of census tracts with 30% or more residents below the poverty threshold is nearly double that of census tracts with less than 10% of residents below the poverty threshold, as shown in Exhibit 37 below.

⁴³ Data from American Community Survey 2014 Estimates

Exhibit 37: Median On-Sale Outlet Density by Percentage of Population below Poverty Threshold



Policies to Mitigate the Costs of Alcohol Abuse

The State Alcoholic Beverage Control (ABC) Act and City zoning policies restrict the number and/or location of alcohol sales outlets in San Francisco in order to protect public health and safety and reduce the incidence of alcohol abuse in a given area. The City's Deemed Approved Ordinance (DAO) establishes public nuisance standards that pre-existing outlets (i.e. outlets established before the State ABC Act was enacted) and new outlets must abide by in order to maintain their licenses. Rather than reduce the incidence of alcohol abuse, the DAO was adopted to mitigate the nuisance impact of existing alcohol sales outlets on surrounding communities. In this section, we describe these policies, discuss best practices related to Deemed Approved Ordinances in California, and describe a recent attempt to establish an alcohol mitigation fee, which ultimately failed in 2010, to recoup some of the costs that accrue directly to City departments.

California Alcoholic Beverage Control Act

California's Department of Alcoholic Beverage Control (ABC) is granted the exclusive right to license the manufacture, importation and sale of alcoholic beverages in the State, and to collect taxes and fees related to alcohol sales. The Department also has the power to deny, suspend or revoke any specific alcoholic beverage license.

The California ABC Act restricts the number of licenses to sell alcohol at the county-level based on population size. Restrictions vary based on whether or not alcoholic beverages are consumed on or off the premises and the type of alcohol

sold. As discussed earlier in this report, on-sale outlets are those that sell alcohol for consumption on the premises, while off-sale outlets are those that sell alcohol for consumption elsewhere. “General” licenses permit the sale of wine, beer, and distilled spirits, and “beer and wine” licenses permit the sale of beer and wine only. According to Sections 23816 and 23817, the maximum allowable license to population ratios are as follows:

- On-sale general licenses: one for every 2,000 people
- Off-sale general licenses: one for every 2,500 people
- Off-sale beer and wine licenses: one for every 2,500 people

On January 1, 1998, Section 23817.5 of the California Code was amended to permanently establish a moratorium on the issuance of off-sale beer and wine licenses in cities and counties where the ratio of such licenses exceeds one for each 2,500 inhabitants. In the City and County of San Francisco, the moratorium ratio for such licenses was established as one license for each 1,250 inhabitants. The San Francisco computation combines off-sale beer and wine licenses with off-sale general licenses to establish the ratio.

As shown in Exhibit 38 below, the density of alcohol outlets in the City exceeds the maximum threshold for on-sale general licenses and off-sale general licenses. Thus, no new on-sale general or off-sale general licenses may be issued. Additionally, no new off-sale beer and wine licenses may be issued because the City exceeds the maximum threshold for total off-sale licenses (general and beer/wine combined). As of December 2016, the City and County of San Francisco is considered a moratorium jurisdiction for the issuance of off-sale beer and wine licenses.

Exhibit 38: License Restrictions by Type

License Type	Number permitted	Number (actual)	Outlet Density by Population
On-sale general	415	1,177	2.8 per 2,000 people
Off-sale total (general and beer/wine)	664	780	1.2 per 1,250 people
Off-sale general	332	603	1.8 per 2,500 people
Off-sale beer and wine	332	177	0.5 per 2,500 people

Source: California Department of Alcohol Beverage Control, 2016

In October 2016, Governor Jerry Brown signed into law Senate Bill 1285, which authorized the California Department of Alcoholic Beverage Control to issue five new on-sale general licenses to new or existing establishments located in specified

census tracts in San Francisco. It was the first time in 77 years that new on-sale general licenses were issued in the City.⁴⁴

Transfer of existing licenses to sell alcohol

When an existing alcohol sales outlet goes out of business, it may trade or sell the license as long as the proposed new outlet is not in an area of “undue concentration.” Per Section 23958.4, areas of “undue concentration” are defined as:

- A crime reporting district with 20 percent more reported crimes than the city average; or
- A census tract with a greater on-sale or off-sale (depending on the type of license being sold) outlet to population ratio than the county average.

However, there is an exception to this rule under the ABC act. A license may be issued in an area of “undue concentration” if the local governing body determines that public convenience or necessity would be served by the issuance. In San Francisco, SFPD’s ABC Liaison Unit (ALU) is responsible for processing ABC liquor license applications, as well as local enforcement of the State ABC Act and the City’s Deemed Approved Ordinance (discussed later in this section). The Board of Supervisors ultimately determines if a license may be transferred to an establishment in an area of “undue concentration” but often relies on the ALU’s recommendation in making this determination.

When a potential new bar or off-sales establishment applies for a license in an area with high crime concentration or high sales outlet density in San Francisco, the City holds a Public Convenience and Necessity hearing to determine if the exception described above applies. The ALU reviews all license applications and may add conditions or protest the application at the public hearing. According to ALU’s Officer-in-Charge, the ALU will typically recommend that the Board of Supervisors approve the transfer of a license to an establishment in an area of “undue concentration” if the business agrees to meet certain conditions, such as restricting hours of operation and providing sufficient lighting outside the establishment. In the majority of these cases, the business agrees to the conditions and the Board approves the license. In cases where the business does not agree to the conditions or the ALU does not recommend license approval, the Board determines whether the license should be issued but typically denies issuance. Between November 2015 and November 2016, the ALU reviewed 488

⁴⁴ Green, Emily. “SF restaurants to get 1st new liquor licenses in 77 years.” SF Gate. October 13, 2016.
<<http://www.sfgate.com/bayarea/article/SF-restaurants-to-get-1st-new-liquor-licenses-in-9968079.php>>

liquor licenses; 21 of these licenses were reviewed by the Board in Convenience and Necessity hearings.

Although San Francisco exceeds the maximum threshold permitted under the State ABC Act for on-sale general and off-sale licenses and no net new licenses of these types may be issued, licenses may be traded or sold between businesses and can change the distribution of alcohol sales outlets across the City. Provisions in the State ABC Act to prevent increases in density in areas with an “undue concentration” typically do not prevent the transfer of licenses to new businesses in these areas because of local determination that the issuance of these licenses serves public convenience or necessity.

Costs Related to the Alcoholic Beverage Control Liaison Unit

According to the Officer-in-Charge of the ALU, SFPD ABC staffing consists of 10 permit officers, and the ALU consists of one lieutenant, one inspector, three sergeants, and one civilian management assistant. The Officer-in-Charge provided the salary detail for all positions in Exhibit 39 below, and we estimated mandatory fringe benefits would be 42% of base pay for the management assistant and 31.5% for all other positions based on the budget. Total compensation for all positions sums to \$2,393,354 in annual costs.

Exhibit 39: ALU Salaries and Benefits, FY 2015-16

Job Class	Job Class Title	FTE	Salaries	Mandatory Fringe Benefits	Total
Q062	Lieutenant III	1	\$162,370	\$51,147	\$213,517
0382	Inspector III	1	142,142	44,775	186,917
Q052	Sergeant III	2	284,284	89,549	373,833
1842	Management Assistant	1	70,200	29,484	99,684
Q002	Police Officer Step 7	10	1,155,440	363,964	1,519,404
Total		15	\$1,814,436	\$578,919	\$2,393,354

Source: Police Department, Budget and Legislative Analyst estimates

City Zoning Restrictions

In addition to State law, which restricts the number of licenses, the City’s Planning Code restricts the location of new alcohol sales outlets. The City has six special use districts or restricted use districts that prohibit new off-sale outlets and establish rules for intensification or relocation of existing outlets. Three of the restricted use districts also prohibit new on-sale outlets. Exhibit 40 below describes these districts.

Exhibit 40: Alcohol Restricted Use Districts

District Name	Planning Code Section	New Outlets Prohibited	
		Off-Sales	On-Sales
Lower Haight Street Alcohol Restricted Use District*	784	Yes	No
Mission Alcoholic Beverage Special Use District	249.60	Yes	No
North of Market Residential Special Use District	249.5(d)	Yes	No
Haight Street Alcohol Restricted Use Sub-district*	781.9	Yes	Yes
Third Street Alcohol Restricted Use District	249.62	Yes	Yes
Lower Polk Street Alcohol Restricted Use District*	788	Yes	Bars only

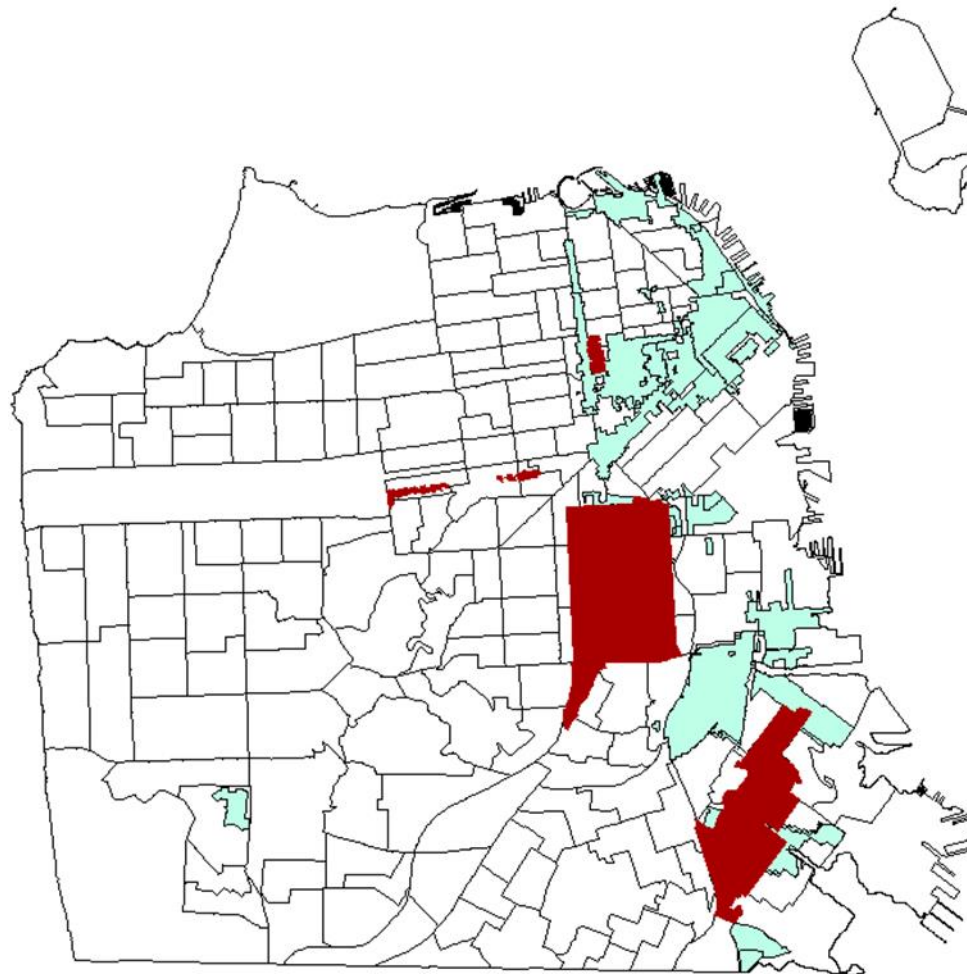
Source: Planning Code

*Rules also apply to non-conforming uses located within a ¼ mile of the district.

According to the Planning Department, the Planning Code does not require public notice nor does it restrict new bars, restaurants or liquor stores in the Production, Distribution & Repair Districts, Residential-Commercial Districts, and most Commercial Districts, unless a portion also overlaps with an alcohol restricted use district. In all other districts, the planning code requires public notice and may require Conditional Use Authorization from the Planning Commission in a public hearing.

Exhibit 41 below shows the City’s alcohol restricted use districts, areas where approval of alcohol licenses is conditional on public notice or a hearing, and areas where the planning code does not restrict the location of alcohol sales outlets, but does not show the ¼ mile radius noted above (*).

Exhibit 41: Map of Planning Code Restrictions on Alcohol Licenses



Legend

- Alcohol licenses not restricted by Planning Code
- Approval of alcohol licenses conditional on public notice or hearing
- Alcohol Special Use Districts (new off-sales prohibited)

San Francisco's Deemed Approved Ordinance (2007)

California law provides minimal controls on the number of alcohol licenses that can be issued at the county level and no restrictions on the number of licenses issued at the municipal level. Local jurisdictions can enact Conditional Use Permit ordinances that are specific to alcohol outlets. However, retail alcohol establishments in existence before the implementation of a Conditional Use Permit are exempt from any requirements that may accompany a Conditional Use Permit (grandfathered in), and their exempt status can be transferred to new owners.

To regulate existing alcohol outlets and licenses, cities in California have enacted deemed approved ordinances (DAOs), which establish public nuisance standards

that pre-existing retailers and new retailers must abide by in order to maintain their land-use permits. The standards do not typically regulate the sale of alcohol but rather address land use and public safety issues associated with alcohol sales, such as loitering, increased police calls, noise, graffiti, and drug sales. While the California Department of Alcoholic Beverage Control is the only entity that may revoke a liquor license, a jurisdiction may revoke an outlet's "deemed approved" status, effectively prohibiting the outlet from continuing to operate in that jurisdiction.

San Francisco adopted a Deemed Approved Ordinance in 2007. The Ordinance establishes which outlets are considered to be "deemed approved;" calls for the development of an outreach and education program to inform outlets about how to operate as a good neighbor in their communities; creates a list of performance standards that reflect existing local nuisance issues and state and federal laws; authorizes penalties for violation of performance standards including administrative penalties from \$500 to \$1,000 or revocation of deemed approved status; establishes procedures for administrative hearings and appeals related to performance violations; and sets an annual fee of \$264 for owners of deemed approved off-sale alcohol uses. The Ordinance allows the annual fee to be adjusted each year to reflect changes in the Consumer Price Index without further action by the Board of Supervisors.

San Francisco's DAO only applies to off-sale alcohol outlets. The performance standards include:

- Ensuring that the premises are properly maintained and do not adversely affect the health, peace, or safety of persons residing or working in the surrounding area;
- Nuisance activities such as litter, graffiti, and unruly behavior associated with the public consumption of alcoholic beverages within the premises or within close proximity of the premises be resolved for the best interests of the community;
- The premises' owner, the employees, or agents do not participate in, or assist persons participating in, illegal activities within the premises or within the boundaries of the premises' property line, including, but not limited to, disturbance of the peace, illegal drug activity, illegal sale of firearms, public drunkenness, drinking in public, harassment of passersby, gambling, prostitution, sale or receipt of stolen goods, or theft, assaults or batteries;
- Violations of any applicable provision of city, state, or federal regulation, ordinance or statute are not committed on the premises; and

- The up-keep and operation of the premises are compatible with and will not adversely affect the livability or appropriate development of surrounding properties and the surrounding neighborhood.⁴⁵

Enforcement of the Deemed Approved Ordinance falls under the purview of the Police Department's ABC Liaison Unit (ALU). The ALU conducts inspections and educates merchants under the State ABC's Informed Merchants Preventing Alcohol-Related Crimes and Tendencies (IMPACT) program. The DAO requires that the police department incorporate the Deemed Approved Performance Standards in these inspections. The goal of these inspections is to educate merchants on the legal requirements and help bring their establishment into compliance if necessary. If an establishment is found to be out of compliance of the DAO performance standards, the ALU will inform the merchant and return at a later date to see if the merchant has corrected the issues. If the establishment is still out of compliance, the officer may issue a citation. Between November 2015 and 2016, the ALU conducted 342 inspections.

According to the Officer-in-Charge of the Police Department's ABC Liaison Unit, the fee charged to "deemed approved" outlets has never been raised and is still \$264. If the fee were to be adjusted based on changes in the U.S. Consumer Price Index since 2007, we estimate the fee would be \$306, which is \$42 (15%) higher than the current fee.

According to the Ordinance, the fees and any administrative penalties collected are to be used to cover the cost to the Department of Public Health of administering an outreach and education program related to the Ordinance and the costs to the City Attorney related to code enforcement. None of the fees or penalties collected is used to cover enforcement costs of the Police Department.

Although the DAO has provisions to ultimately revoke the "deemed approved" status of establishments that do not comply with the ordinance, no establishments have lost their status under the ordinance since its establishment in 2007. According to the Officer-in-Charge of the ALU, the hearing process is cumbersome, and the City Attorney has never brought a deemed approved establishment to an administrative hearing over compliance with the DAO. The Officer-in-Charge states that if an establishment is out of compliance with the performance standards, the ALU pursues resolution with the owner directly. However, if an establishment is routinely the cause of nuisance and the ALU cannot reach a resolution with the owner, the ALU would typically file an injunction with the City Attorney's office rather than pursue the enforcement mechanisms of the DAO. Additionally, the ALU may bring a trial through the State

⁴⁵ The complete Deemed Approved Off-Sale Alcohol Use Standards are included in Appendix A of this report.

ABC process to petition that a liquor license is revoked, but this does not typically occur.

Deemed Approved Ordinance Best Practices

A 2009 report conducted on behalf of the Ventura County Behavioral Health Department identified best practices related to the implementation of Deemed Approved Ordinances statewide.⁴⁶ It found that San Francisco is the only county with a DAO that does not regulate both on-sale and off-sale outlets. It also noted that San Francisco lacks a dedicated enforcement officer to ensure proper implementation. San Francisco's penalties for violating the Deemed Approved Ordinance are solely civil, while other jurisdictions enact criminal penalties.

San Francisco's written policy is also more lenient compared to other jurisdictions when it comes to revoking an establishment's "deemed approved" status. Under San Francisco's DAO, revocation may only occur after the second violation within three years, which is perhaps why no revocations have occurred to date. In Alameda County, revocation may proceed after the first hearing at which findings of a violation are made. Several other jurisdictions also allow revocation to begin after an initial hearing.

Finally, San Francisco is on the low end of the minimum and maximum annual fee schedule set by jurisdictions and used to charge outlets monitored under the DAO, as illustrated in Exhibit 42 below. San Francisco would still be on the low end of the fee schedule if the current fee were to be adjusted based on changes to the Consumer Price Index. We estimate the adjusted fee would be \$306, as discussed previously.

⁴⁶ Mosher, James, Carol Cannon, and Ryan Treffers. "Reducing Community Alcohol Problems Associated with Alcohol Sales: The Case of Deemed Approved Ordinances in California." Alcohol Policy Consultations: 2009.

Exhibit 42: Annual Fees Charged to Outlets under Deemed Approved Ordinances

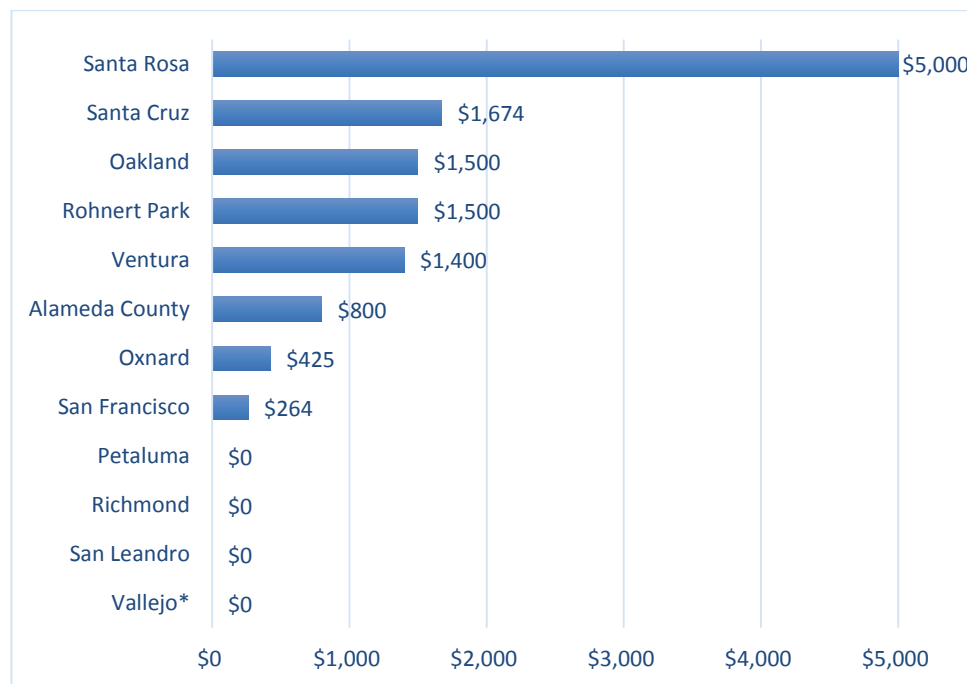
Jurisdiction	Minimum Fee*	Maximum Fee*
Santa Rosa	\$100	\$5,000
Santa Cruz	\$226	\$1,674
Oakland	\$1,500	\$1,500
Rohnert Park	\$75	\$1,500
Ventura	\$250	\$1,400
Alameda County	\$800	\$800
Oxnard	\$425	\$425
San Francisco	\$264	\$264
Petaluma	No fee	No fee
Richmond	No fee	No fee
San Leandro	No fee	No fee
Vallejo	No fee**	No fee**

*As of 2009

**Vallejo has a fee of \$300 that is paid one time

San Francisco has the lowest maximum annual fee out of all jurisdictions that have an annual fee, as illustrated in Exhibit 43 below. Vallejo has a one-time fee of \$300 but no annual fee. Three jurisdictions (Petaluma, Richmond, and San Leandro) have no fee—annual or one-time.

Exhibit 43: Maximum Annual DAO Fee by Jurisdiction



*Vallejo has no annual fee but charges a one-time fee of \$300 (as of 2009).

Proposed Alcohol Mitigation Fee (2010)

In 2010, the Lewin Group prepared an estimate of the alcohol-related costs incurred by the City and County of San Francisco. Included in the estimate were costs related to providing care for people with alcohol-related illness, treatment and prevention costs, costs to the law enforcement system, costs resulting from alcohol-related motor vehicle crashes and other injuries, and the indirect costs associated with disability and diminished capacity.⁴⁷

Specifically, the estimation included the following components:

- Department of Public Health
 - Treatment and Prevention Costs
 - San Francisco General Hospital Services
 - Sobering Center
- Fire Department
 - Emergency Medical Services transportation

The report estimated a total of \$17.7 million in related costs. Using this estimation, Supervisor Avalos proposed a fee of \$.076 per ounce of ethanol to be charged to alcohol wholesalers and manufacturers selling directly to consumers. Revenue generated for the fee was intended to be spent on direct agency, health and administrative costs related to the harm caused by alcohol consumption in the City.

The Board of Supervisors approved enabling legislation for the alcohol mitigation fee, 7-3, but the measure was ultimately vetoed by Mayor Newsom in the fall of 2010.

Policy Considerations

In light of the findings from this report regarding the impact of alcohol abuse on City services and the economic costs borne by the City, as well as the findings regarding the density of alcohol sales outlets and policies to mitigate the costs of alcohol abuse, we recommend that the Board of Supervisors consider policy changes in three main areas: alcohol-related tracking, alcohol outlet density, and the City's Deemed Approved Ordinance.

Alcohol-Related Tracking

Developing an estimate of the City administrative and operational costs that are alcohol-related, including public safety costs, motor vehicle incidents and health-related programming is difficult because many departments do not indicate

⁴⁷ Lewin Group. "The Cost of Alcohol to San Francisco: Analyses Supporting an Alcohol Mitigation Fee." June 30, 2010.

alcohol involvement in their databases, or they only indicate alcohol involvement for the intoxicated individual, but not for victims of alcohol-related collisions and other incidents. The departments, especially those that are in the process of adding new databases, should explore the feasibility of adding an indicator to their databases to specify alcohol involvement.

Alcohol Outlet Density

Our analysis showed that certain census tracts have a disproportionate share of alcohol sales outlets relative to their population size, and these areas tend to have a higher density of violent crime and property crime as well as a higher proportion of residents with incomes below the poverty threshold. If these areas face a disproportionate share of the harms caused by alcohol abuse (as suggested by previous research and our findings), then restrictions on outlet density in these areas may directly affect the well-being of their communities.

As discussed earlier in this report, the State ABC act grants discretion to local governments in issuing liquor licenses to new establishments located in areas of “undue concentration” (of sales outlets and crime). State law prohibits the issuance of liquor licenses in these areas unless the local governing body finds that issuance serves public convenience or necessity. The Public Safety and Neighborhood Services Committee determines whether issuance serves public convenience or necessity, and they rely on the recommendation of the ALU. The ALU rarely recommends that the committee deny issuance, but they regularly use this opportunity to specify conditions to mitigate the nuisance impact of the establishment on the surrounding community. The City may want to consider exercising greater latitude to deny issuance or to add additional conditions in light of the finding that these areas have a higher concentration of low-income residents.

San Francisco’s Deemed Approved Ordinance

As illustrated by our research into the practices of other jurisdictions, the Deemed Approved Ordinance could be strengthened. San Francisco is the sole jurisdiction to only regulate off-sale outlets; all other jurisdictions in the State with a DAO regulate both on and off-sale outlets.

San Francisco also has the lowest annual fee to be paid by alcohol outlets, among jurisdictions that charge an annual fee. Based on changes to the Consumer Price Index, we estimate the annual fee could be raised from \$264 to \$306 without approval from the Board of Supervisors. The Board may want to consider raising the annual fee by more than what is currently allowed under the Ordinance and allowing a portion of fee revenue to be used to cover enforcement costs of the San Francisco Police Department. Currently, any fees or penalties collected may

only be used to cover costs to the Department of Public Health for outreach and education related to the DAO and costs to the City Attorney for code enforcement.

Finally, San Francisco's process for revoking an establishment's "deemed approved" status is more cumbersome than other jurisdictions, as it may only begin after the second violation of the DAO occurs within a three-year period. The City Attorney has never brought a deemed approved establishment to an administrative hearing over compliance with the DAO, and no establishments have lost their "deemed approved" status under the DAO since its passage.

Conclusion

In conclusion, we estimate **\$54,828,628** in total City administrative and programmatic annual costs related to alcohol. The majority of these costs – 91 percent or \$50,056,931 – is for treatment, prevention and education and is administered by the Department of Public Health and the Human Services Agency. The remaining costs accrue to the public safety departments and cover the cost of specific incidents and service calls. Lastly, the Department of Public Works pays for alcohol-related cleanup costs.

We also estimated the broader economic costs that result from alcohol abuse and related incidents in the City using methodologies from academic studies. We calculate costs related to years of life lost and hospitalizations due to alcohol-related illness and injury; injury and fatality due to motor vehicle collisions; fetal alcohol syndrome; high-risk sex; productivity loss, and crime. We calculate total economic costs of **\$655,316,528**, and total quality-of-life costs of **\$1,065,439,490**.

Appendix I

Unit Costs (2010) All Positive Blood Alcohol Related Injuries and Fatalities

		Injury ^a							
	Property Damage Only	Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Weighted Average	Fatality
Medical	\$0	\$0	\$2,998	\$12,128	\$51,240	\$139,252	\$391,712	\$990	\$11,317
Emergency Services	28	21	89	194	416	838	855	14	902
Market Productivity	0	0	2,941	20,192	67,709	149,100	346,292	1,161	1,156,859
Household Productivity	60	45	941	7,361	24,146	39,011	98,224	379	315,326
Insurance Admin.	191	143	3,845	5,436	16,270	29,736	74,102	503	28,322
Workplace Costs	62	46	341	2,644	5,776	6,361	11,091	102	11,783
Legal Costs	0	0	1,412	3,986	13,158	28,217	86,150	291	106,488
Subtotal Collision Costs	\$341	\$255	\$12,567	\$51,941	\$178,715	\$392,515	\$1,008,426	\$3,440	\$1,630,997
Congestion Costs	1,077	760	1,109	1,197	1,434	1,511	1,529	161	5,720
Property Damage	2,444	1,828	5,404	5,778	10,882	16,328	15,092	676	11,212
Subtotal, Congestion and Property Damage	\$3,521	\$2,588	\$6,513	\$6,975	\$12,316	\$17,839	\$16,621	\$838	\$1,647,929
Quality Adjusted Life Years Subtotal	\$0	\$0	\$24,382	\$362,068	\$864,455	\$2,111,048	\$4,970,847	\$15,677	\$8,495,097
Comprehensive Total	\$3,862	\$2,843	\$43,462	\$420,984	\$1,055,486	\$2,521,402	\$5,995,894	\$19,955	\$10,143,026

^a The unit cost numbers for injuries were reported across six injury categories that ranged in severity. As we do not know the severity of each injury in our injury category, we took a weighted average of costs across the six injury categories. The weighted average was based on the prevalence of each type of injury due to alcohol-involved crashes in a national sample. The weights by injury are shown below.

Weights by Injury

Category 1	0.4700
Category 2	0.4200
Category 3	0.0700
Category 4	0.0300
Category 5	0.0100
Category 6	<u>0.0023</u>
Total	1.0023